The EDISON ELECTRIC INSTITUTE BULLETIN

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November 1952

We Are Pioneers
B. L. England

New England Power Resources
Albert A. Cree

Long-Range Forecasting
H. H. Scaff

Pioneering Farm Service
A. E. Silver

Accounting and Commercial Committee Work for 52-53

Published Monthly by Edison Electric Institute

ELECTRICAL RESEARCH STATISTICS
THE ELECTRIC LIGHT AND POWER INDUSTRY

Current Statistical Data Covering 100 Per Cent of Industry

July, 1951-1952

SOURCE AND DISPOSAL OF ENERGY—MONTH OF JULY

	1952	1951	%
GENERATION* (Net)			
By Fuel Burning Plants	23,784,928,000	22,266,351,000	+ 6.8
By Water Power Plants	8,737,801,000	8,292,228,000	+ 5.4
Total Generation	**32,522,729,000**	**30,558,579,000**	**+ 6.4**
Add—Net Imports Over International Boundaries	147,753,000	181,962,000	−18.8
Less—Company Use	108,531,000	109,527,000	− 0.9
Less—Energy Used by Producer	1,042,053,000	822,400,000	+26.7
Net Energy for Distribution	**31,519,898,000**	**29,808,614,000**	**+ 5.7**
Lost and Unaccounted for	4,605,857,000	4,145,525,000	+11.1
Sales to Ultimate Customers	**26,914,041,000**	**25,663,089,000**	**+ 4.9**

CLASSIFICATION OF SALES

NUMBER OF CUSTOMERS—As of July 31			
Residential or Domestic	40,041,279	38,512,829	+ 4.0
Rural (Distinct Rural Rates)	1,689,490	1,644,847	+ 2.7
Commercial or Industrial:			
Small Light and Power	5,608,082	5,506,303	+ 1.8
Large Light and Power	255,081	242,988	+ 5.0
Other Customers	156,296	159,474	− 2.0
Total Ultimate Customers	**47,750,228**	**46,066,441**	**+ 3.7**
KILOWATTHOUR SALES—During Month of July			
Residential or Domestic	6,567,194,000	5,778,765,000	+13.6
Rural (Distinct Rural Rates)	993,644,000	951,867,000	+ 4.4
Commercial or Industrial:			
Small Light and Power	5,361,312,000	4,875,093,000	+10.0
Large Light and Power	12,638,374,000	12,729,024,000	− 0.7
Street and Highway Lighting	242,079,000	223,031,000	+ 8.5
Other Public Authorities	670,882,000	637,124,000	+ 5.3
Railways and Railroads:			
Street and Interurban Railways	231,958,000	249,960,000	− 7.2
Electrified Steam Railroads	163,959,000	171,660,000	− 4.5
Interdepartmental	44,639,000	46,565,000	− 4.1
Total to Ultimate Customers	**26,914,041,000**	**25,663,089,000**	**+ 4.9**
Revenue from Ultimate Customers	**$ 493,359,000**	**$457,799,100**	**+ 7.8**

RESIDENTIAL OR DOMESTIC SERVICE

AVERAGE CUSTOMER DATA—For 12 months ended July 31			
Kilowatthours per Customer	2,104	1,933	+ 8.8
Average Annual Bill	$58.49	$54.90	+ 6.5
Revenue per Kilowatthour	2.78¢	2.84¢	− 2.1

* By Courtesy of the Federal Power Commission.

THE EDISON ELECTRIC INSTITUTE BULLETIN is published monthly by the Edison Electric Institute, an association of electric light and power companies in the United States and its territorial possessions. Its affiliate members consist of members of the Canadian Electrical Association.

The objectives of the Edison Electric Institute are:

The advancement in the public service of the art of producing, transmitting, and distributing electricity and the promotion of scientific research in such field.

The ascertainment and making available to the members and the public of factual information, data, and statistics relating to the electric industry.

To aid its operating company members to generate and sell electric energy at the lowest possible price commensurate with safe and adequate service, giving due regard to the interests of consumer, investor, and employee.

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The EDISON ELECTRIC INSTITUTE BULLETIN

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CONVENTIONS AND MEETINGS

1952

NOVEMBER

3 Canadian Electrical Association Standardization Coordination Committee, Montreal, Que.

6- 7 PEA Communications Committee Fall Meeting, Hotel Syracuse, Syracuse, N. Y.

10 Canadian Electrical Association Grounding Committee, Montreal, Que.

10-11 EEI Power Station Chemistry Subcommittee, Prime Movers Committee, Netherlands Plaza Hotel, Cincinnati, Ohio.

10-13 NEMA Annual Meeting, Haddon Hall Hotel, Atlantic City, N. J.

10-13 NARUC Annual Meeting, Hotel Marion, Little Rock, Ark.

12 PIP Mid-Atlantic Regional Meeting, Roosevelt Hotel, Pittsburgh, Pa.

13 Canadian Electrical Association Accident Prevention Committee, Montreal, Que.

13-14 PEA Fall Meeting, Relay Committee, Robert Treat Hotel, Newark, N. J.

17-19 EEI Industrial Relations Committee, Annual Fall Round-Table Conference, Sheraton Hotel, St. Louis, Mo.

20 Canadian Electrical Association Public Relations Committee, Montreal, Que.

21 New Jersey Utilities Association Annual Meeting, Seaview Country Club, Atlantic City, N. J.

30-Dec. 5 ASME Annual Meeting, Hotels Statler and McAlpin, New York, N. Y.

DECEMBER

1- 2 EEI Prime Movers Committee, Hotel Martinique, New York, N. Y.

1- 2 EEI-AGA General Accounting Committees, Hotel Muehlebach, Kansas City, Mo.

3- 4 EEI Commercial Lighting Committee, Netherlands Plaza Hotel, Cincinnati, Ohio

4- 5 PUAA Region 2 Meeting, Claridge Hotel, Atlantic City, N. J.

8- 9 EEI Industrial Power and Heating Section, Jung Hotel, New Orleans, La.

8- 9 EEI-AGA Planning Committee, EEI Headquarters, New York, N. Y.

10-11 EEI Cost Management Program Subcommittee, Sheraton Hotel, Pittsburgh, Pa.

11-12 EEI Home Service Committee, EEI Headquarters, New York, N. Y.

18 EEI Industrial Relations Committee, EEI Headquarters, New York, N. Y.

1953

JANUARY

12-13 EEI Accident Prevention Committee, Hotel Muehlebach, Kansas City, Mo.

15 EEI Industrial Relations Committee, EEI Headquarters, New York, N. Y.

15-16 Canadian Electrical Association Engineering and Operating Division Meeting, Nova Scotian Hotel, Halifax, N.S.

22-23 Canadian Electrical Association Sales Division Meeting, General Brock Hotel, Niagara Falls, Ont.

29-30 Canadian Electrical Association General Division Meeting, Mont Tremblant Lodge, Que.

FEBRUARY

12-13 EEI Transmission and Distribution Committee Meeting, Shoreham Hotel, Washington, D. C.

16 EEI Industrial Relations Committee, Palmer House, Chicago, Ill.

16-17 EEI Electrical Equipment Committee, Jefferson Hotel, St. Louis, Mo.

19-20 EEI-AGA Conference Planning Committee, Rochester, N. Y.

23-25 Canadian Electrical Association Engineering Division, Western Zone, Calgary, Alta.

27-28 Controllers Institute of America, Southern Conference, Shamrock Hotel, Houston, Texas.

MARCH

2- 3 Canadian Electrical Association Sales and General Division Meeting, Western Zone, Edmonton, Alta.

19 EEI Industrial Relations Committee, EEI Headquarters, New York, N. Y.

26-27 Oklahoma Utilities Association Convention, Tulsa Hotel, Tulsa, Okla.

APRIL

16 EEI Industrial Relations Committee, in conjunction with Personnel Section of Ohio Electric Institute, Netherlands Plaza Hotel, Cincinnati, Ohio

20-22 National Conference of Electric and Gas Utility Accountants, Sherman Hotel, Chicago, Ill.

21-23 Oklahoma Utilities Association, Southwestern Gas Measurement Short Course, University of Oklahoma, Norman, Okla.

MAY

1- 2 Controllers Institute of America, Pacific Coast Conference, Hotel Ambassador, Los Angeles, Calif.

3- 6 EEI Purchasing and Stores Committee Annual Meeting, Hotel Statler, Detroit, Mich.

New York State Electric & Gas Co. Conducts Centennial Observances

TO celebrate its 100 years of public service, the New York State Electric & Gas Corp. conducted a series of observances, highlighted by employee centennial birthday dinner parties, in numerous communities throughout the company's service area last October 28.

One of the principal events of the day was the groundbreaking ceremony at Heddens, north of Ithaca on the east shore of Cayuga Lake, where the company will construct a 500,000-kw steam-electric generating station on a 100-acre tract. Following the observance at the site of the projected plant, recently named Milliken Station in honor of Arnold W. Milliken, Vice President and General Manager, a luncheon for industrialists, businessmen, and civic leaders from the Ithaca-Auburn region was held in the Ithaca Hotel.

Incorporated in 1852 as the Ithaca Gas Light Co., New York State Electric & Gas began business with a capital stock of $75,000 as one of the leading concerns in the small city of Ithaca, which then had a population of 7000. In a century, the company's capital investment has increased to more than $183,000,000, and the area served has been extended to include 35 per cent of New York State.

We Are Pioneers

B. L. England

President, Atlantic City Electric Company, and
President, Edison Electric Institute

An address before the Rocky Mountain Electrical League, Glenwood Springs, Colo., September 10, 1952

OUT here in Colorado, there is a tradition of explorers and frontiersmen, undaunted men who thrived in these vast and rugged panoramas, and I am going to call on that tradition, which is stronger in this part of the nation than in any other, and talk as one pioneer to another.

Many, I'm sure, will proudly admit pioneer ancestry but may modestly feel that the description can no longer apply. It is true that most of us think of a pioneer as some one along the lines of Kit Carson, a tough, fearless individual pushing through trackless wilderness, facing dangers already too well known and others not yet encountered, to open a way for people to follow.

A New Way of Life

Believe it or not, we *are* pioneers—right here and now. From our electric industry vantage point, we see no limit, no impassable ocean, no insuperable barrier, and we push on. As our predecessors opened a new way of life to the American people, so do we continue—widening the prospect, preparing an ever-better future in electrical living for those who come after.

Because we are at the forefront, it is inevitable that we encounter problems, difficulties, and hazards. These take more subtle forms than they did in the days of Kit Carson and the Indian fighters, when the ability to shoot straight could settle nearly everything. The problems of today's pioneers not only call for courage—they require the utmost patience, courtesy, ingenuity, initiative, and intelligence.

In addition to the main task of opening the way to increasingly better living, we must do our part in making sure that the American trail continues to be blazed clearly, as it has been by our predecessors, so that all Americans may move forward together with confidence. Those who would craftily try to obscure the road already traveled or would delude and confuse us into taking false paths toward collectivist ruin may be Red—but they certainly are not Indians.

Dangers such as these are not new to the electric industry's pioneers. As before, they are forging ahead, carving out new gains in service to the public, in technical improvement, and operating efficiency. And they are exploring and developing increasingly important fields, ranging from area development to atomic energy.

In the early days of the industry, the tasks were difficult, but, compared to today, they were not so complex. Arduous efforts had to be made to convince a largely skeptical public that electricity was not an eccentric's hobby but a force which could help America toward a future in which miracles of home comfort and industrial production would be commonplace. Heroic endeavor was required just to get electricity to the people in this vast land and to keep the young industry alive and growing.

A pioneering partnership of the greatest value was started at that time when men of vision and courage backed their belief in the new force by becoming electrical manufacturers, distributors, and dealers. It would be impossible to imagine the realization of today's electrical age without these staunch allies, who have done so much to make the promise of electric power the reality of electric service. Together, all of us who are the electrical industry have grown in strength and service, and, together, we shall continue to improve upon what has already been so well begun.

Continuing Upward Course

Our pioneering work is now no less difficult, no less important than it was before, but it is harder to see clearly. Because electricity is now widely accepted, there may be temptations sometimes to let it sell itself. Because ours is one of the nation's foremost industries, no longer a beginner struggling for a foothold, there may be a tendency to sit back with a feeling *that we have arrived.*

No industry which wants to survive successfully can arrive. In this country, industrial accomplishment has, in a sense, repealed the law of gravity. In American industrial progress, what goes up must *continue* to go up.

Keeping our industry on an upward course will require real work and the highest order of leadership. We have not only the constant task of overcoming what seem to be natural obstacles common to most humans but we must also move against the active efforts of those who wish to bring electric power supply completely into the hands of government.

The Threat of Socialism

Nowhere is this drive more plainly embodied than in the Interior Department's program, which has been clearly outlined on numerous occasions by high officials. On every side, we see evidences of the heavy campaign being conducted for Federal generating plants and Federal transmission lines. If the Interior Department succeeds in carrying out its plans, socialism must eventually result, not just for the electric industry but for other industries as well.

What is required from electric company leaders is genuine industrial statesmanship, which can see, without blinking, the full consequences of completion of the government power program and which can work, forcefully and effectively, to prevent the eclipse of the investor-owned electric industry and, what is far worse, the following inevitable plunge of the American people into socialistic darkness.

An outstanding exposition of Federal-power schemes, their aims, and effects is contained in the paper presented at this year's EEI Convention by J. E. Corette, President of The Montana Power Co. Mr. Corette also made some sound suggestions as to how the electric companies can cir-

cumvent government power's destructive intentions and assure the bright future which we know is possible in this nation.

Our pioneering position is admirable for us to undertake this mission. We are automatically among the pacesetters and leaders because electricity is the energy essential to American civilization.

In the years ahead, there will be electrically operated automatic factories which will make our present-day mass production lines seem as inefficient as the old mills with their flapping belts. On the farm there will be methods of food growing that will make today's modern agriculture seem as antiquated as a horse-drawn plow. And in the home there will be electric contributions to human comfort and enjoyment that will make today's house, with its television and electric kitchen, seem as undesirable as a dwelling with bare bulbs and a battery radio.

That is the era for which we are pioneering right now. It is no more fantastic than the United States in 1952 would seem to an audience of 50 years ago.

Ever-Greater Sense of Service

It was in those days that the spirit of service which has now become so important to the electric industry and to its customers was born. Today, the American who sees himself increasingly dependent on electric power is increasingly appreciative of that spirit. We who render electric service have a responsibility of awesome proportions which grows automatically as more electric power is utilized in more ways. With this expanding responsibility must go an ever-greater sense of service, to inspire our own activities and to keep the public good will and backing essential to progress.

In the exercise of this spirit, electric company people are often called upon to show as much bravery, conscientiousness, and ability to endure physical hardship as any frontiersman. When conditions under which service must be rendered are difficult, whether resulting from flood, storm, or war-time emergency, the electric company and its personnel stand ready to exert unselfishly every effort on behalf of their customers. Remembrance of real help in time of trouble is an abiding trait of human nature, and no organization devoted to providing a public need can afford to be indifferent to this fact. Both for the benefit of the customer and the company, the spirit of service must burn its brightest when conditions seem at their blackest.

But an electric company is not limited to these dramatic displays of its concern for its community. It can take active part in advancing community prosperity and welfare in a variety of ways.

Area development, a wide field which is swiftly increasing in importance, is attracting growing electric company interest. It is easy to understand why this should be. Unlike manufacturing plants or other enterprises, an electric company cannot pull up stakes and move out of a locality it conditions are not to its liking. With its service extended into every phase of community life, an electric company which helps to promote the prosperity of its community will gain both tangible financial benefits and customer and public good will—an intangible whose presence or lack often produces very tangible effects.

Emphasis in area development has thus far been primarily on industrial and agricultural improvement, in cooperation with other interested local groups and organizations.

Through concerted community effort, with the local electric company taking a leading part, new manufacturing plants have been established, new methods and more profits have been brought to existing industry and to the farmstead. But the vast possibilities of area development activities have barely been tapped. Here is a challenge worthy of the best men in the industry, and one which holds great potential rewards.

On the technical frontier, progress today is not the matter of inspired headline-making invention that it used to be. Instead, it involves a multitude of carefully planned and organized approaches to improvement, refinement, and development, and the constant pushing away of barriers to greater efficiency and economy of operation in the electric systems of the nation.

The engineers who are moving forward in the atomic-electronic age have opportunities for original contribution which could very well dumbfound those who have come before. And never have scientists, engineers, and technical people been held in such high universal esteem as they are now—a tribute both to what they have accomplished in the past and to their ability to bring about even greater wonders in the future.

It has always been true, in the development of American industry, that technical advances and enterprising salesmanship have gone together. The salesman takes the result of technical ingenuity to the people and, frequently, must overcome mistrust and inertia in demonstrating how the innovation may be of service. His success opens markets and brings home revenue which encourages and makes possible further technical progress for the benefit of the public. But without the creative activity by which the technical man improves and develops products and services, the salesman would be helpless with nothing to sell.

In the complex corporate structures of today, there is frequently a tendency to lose sight of the vital linkage between these two functions, which in themselves seem so widely different. But the very difference between the two poles of engineering initiative and inventiveness and commercial enterprise provides the stimulating current which makes possible the progress now accepted by Americans as a hallmark of their way of life.

Salesmanship and Revenue Growth

Selling continues to be a most important phase of electric industry achievement. To insure the sound growth of revenues required to make the most of adjusted rate structures, today's salesman must, in his load-building activities, exercise skill and understanding to a degree that would amaze his pioneering predecessors. He must make sure that the expensive equipment which provides the service he sells works to its best revenue-producing capacity so that revenues will keep pace with the expansion of productive facilities. In turn, a good revenue record makes it easier to call forth financial resources needed for plant expansion.

It is clear that the interaction of highly specialized talents of many kinds is required in developing tomorrow's electric industry. And, in dealing with many problems which are common to all electric companies, there has been increasing cooperation among organizations and individuals which has been most encouraging and productive.

This cooperation is clearly evident

in the functions of the Edison Electric Institute's committees. Until I took over the President's post, I had no real idea of the extent and value of the contributions of the some fifty working groups in the EEI-committee organization.

Every significant area of electric operation is covered. Well over 1000 experts in their chosen fields from electric companies throughout the nation serve as committee members. In a sense, they are the industry's scouts, moving ahead of the main advance, reporting on possibilities, offering suggestions as to the best way to handle an accounting problem, a safety campaign, a financing question—considerations of every kind, large or small, which conceivably could affect a company or the industry in its service to the public.

In view of the intensity and diversity of the industry's effort in behalf of the public electric supply, we may occasionally feel that we are not appreciated by the people as we should be. Naturally, most people haven't the time or the inclination to know as much about our business as we do. They have their own problems. If the fullest practical measure of public understanding is to be gained, we must present our case patiently and continually, making sure that what we say and what we do are consistent and filling in the broad outlines of our story with the facts needed to carry conviction.

Americans have always had to be shown. Our almost instinctive refusal to take anything at face value is one of our democracy's greatest safeguards. We of the electric industry can bear this out. For 20 years now, we have been under heavy attack by the advocates of government power; yet there are reassuring indications that their sound and fury are falling on increasingly unconvinced ears.

You may remember the big government project dedication at the beginning of July, which produced much publicity concerning unfavorable remarks made there about the electric companies. Shortly after, a telephone call was received at Institute headquarters from a man who identified himself as a union member in the postal service. He said he and some coworkers had looked up Bureau of Labor Statistics figures comparing the cost of living with the cost of electricity and were astounded by what they found, especially in view of what has been said at the dam dedication. He wanted to know if we knew about these figures, because he thought they were most important to the electric companies' case.

He had discovered that the cost of living index has climbed from an average of 99.4 in 1939 to 185.6 in 1951—nearly doubling in 12 years—but the index for household electricity had actually declined in the same period from 96.2 to 91.2.

As we know, electric service represents less than 1 per cent of the family budget, and over-all the cost of living is continuing to show its record-breaking abilities.

Other facts and figures are available to Federal-power advocates, but they show little desire to bring them before the people. Americans should not have to dig after the data which are developed by tax-supported agencies. The facts should be made widely available whether they hurt pet governmental schemes or not.

Federal Power Claims Refuted

One constant Federal power claim is that competition from Federal projects forces the electric companies to keep their rates down. These government power promoters are holding back the truth from the American people to further the cause of socialized electricity. The incontrovertible facts, borne out by the statistics available in every Washington office dealing with electric power, are these:

The largest decreases in electric prices came long before Federal projects were more than planners' dreams.

From 1882 to 1913, the average price per residential kilowatthour came down from 25 cents to 8.7 cents—a decrease of more than 16 cents, back when a penny would buy a penny's worth.

Further advances in technology and operation made it possible to get the average price down to 5.6 cents per kilowatthour by 1932, a decrease of a little over 3 cents in the 19 years preceding the New Deal—Fair Deal era.

In the following 19 years, the price of a kilowatthour of household electricity declined to an average for 1951 of 2.81 cents—a decrease smaller than the decline shown in the 19 years prior to 1932.

The invasion of the Federal government in the power field during this period did not accelerate the long-established downtrend in electric rates. In fact, government fiscal policies made it difficult to keep the price trend down at all. Inflation has caused costs of electric generation to skyrocket, and taxation has become an increasingly heavy burden.

Taxes are another subject on which the truth should be told. Taxes are the electric companies' largest item of expense, amounting in 1951 to over one billion dollars. Of every dollar in revenue coming in, about 23 cents were turned over to Federal and local governments as taxes. If the companies were as free from taxes as Federal projects are, they could afford to cut their household electric prices in half.

We cannot let our pioneering spirit falter in the face of the ambush tactics carried on by Federal power promoters. We know that the way which the electric companies have helped to open leads to greater progress for all Americans. If we allow the false guides of Federal power to usurp our place, the nation will inevitably be led toward the swamps of socialism and the quicksands of communism.

Fortunately, we have an essential faith in our industry, and it has motivated vigorous responses to the threat of government power. We have also seen that this faith is part and parcel of a strong loyalty to America's free institutions, which encourages the growth and development in the public service of an industry like ours. We are no longer a single voice crying in the wilderness of bright and poisonous economic and political theories into which the nation has been, perhaps unwittingly, led in the last two decades. There are strong indications that the people wish to seek a better way to the future.

I think an important factor in this shift has been the increasingly clear difference between electric companies and government power projects. Our faith in ourselves is also a faith in the American people, because, after all, our customers, our stockholders, our employees, *are* America. But government power promoters have faith only in government planning, which only they can represent. Hence, their ambition is to take away individual responsibility and substitute government control.

By performing power-supply duties efficiently and considerately, by acting as good citizens in our communities, the nation's electric companies bring into focus the senseless and destructive motivations of government power, so that people can see and act. The ruthless bureaucratic selfishness involved in government projects is being demonstrated now as it has never been before—at Niagara Falls, on the Roanoke River, in Hell's Canyon, and in other places in the nation—and we must make sure that the people have full realization of the significance of what is being attempted.

A Ten-Point Comparison

Because we have been subjected so long to unfair competition, we may not realize completely how well we stand in comparison to the government invaders, and we may not have made this relative position plain enough to the public. Here is a ten-point comparison, which summarizes in a general way the characteristics and motives of electric companies and government power projects. Applied to the industry or to individual electric companies with supporting facts, such a summary could have an eye-opening impact on many people and show clearly with whom their welfare and future lie.

First, electric operating companies are distinctly local units, responsive to community needs and active in community improvement. In contrast, governmental power projects are responsible to centralized bureaucratic authority, and local communities have small voice in their affairs.

Second, electric company trusteeship of electric supply in the public interest is carefully watched over by duly constituted local, state, and Federal regulatory commissions and agencies. But government power agencies are not subject to regulatory authority, and make their own rules.

Third, electric companies provide millions of dollars annually in taxes to support government, while, instead of providing tax support, government projects draw on the tax money of the nation to subsidize their activities.

Fourth, electric companies operate in the best tradition of the American enterprise system, an integral part of our heritage of freedom. But government projects, if spread throughout the land as advocated by their supporters, would place the economic and social life of whole regions in the control of small groups of politically appointed administrators, gravely endangering American democracy.

Fifth, electric companies direct their energies to the improvement of electric service and the promotion of its use for the benefit of all their customers, increasing the ease with which they may develop, in business or otherwise, as free people. On the other hand, Federal government projects which produce power and engage in other activities are able to exert a dominant influence over the people dependent upon them and seriously restrict free development whenever it suits agency bureaucrats.

Sixth, electric companies pass on the benefits of increased operating efficiencies to the public in the form of lower rates, in keeping with the economics of the business. But governmental projects set rates at politically pleasing levels and make up power costs with the aid of allocations to other activities and by drawing money from the public treasury.

Seventh, electric companies are owned by millions of stockholders in every walk of life and thereby contribute to the financial security of millions of Americans. But the nation's taxpayers finance governmental projects, whether they want to or not, and they have no direct vote or voice in how much of their money shall be spent or how it will be used.

Eighth, electric companies have an excellent management-labor record, offering fair wages, job security and other benefits, thereby attracting the above-average personnel needed to assure fine electric service. But politics enters into any government activity, power project or otherwise, often prompting selection of unqualified but politically acceptable personnel and encouraging inefficient, even corrupt, operation.

Ninth, electric companies must earn enough on their investment to attract and hold the support of investors, who, besides being owners of the business, are electric customers as well. To succeed in this, the electric companies emphasize efficiency, courtesy, and initiative in their operation, so that the public will be pleased with its service. On the other hand, government enterprise does not have to pay its way, so waste, inefficiency and stagnation are fostered, along with a careless and indifferent attitude toward the people served, who have no recourse beyond the government agency itself.

Tenth, the electric companies' record of past achievement shows that they have never faltered in living up to their responsibilities, and their plans for the future indicate even greater accomplishment in the years ahead. But the record of government-dominated enterprises shows that they have contributed practically nothing to the technical advance of the electric industry; that most advocates of government in the power business are moved by political and ideological considerations; and that in the future they hope to dominate the entire electric industry and with it the economic and social life of the country.

Those are the ten points of the electric industry, showing what Americans must choose between.

Bringing the Facts to the People

There can be no doubt that the contrast between electric companies and government projects is a vivid one and capable of making a strong impression on Americans who still believe in the rights and freedom of men. It is our duty to maintain that contrast between free enterprise at its best and government bureaucracy and to make sure that it is brought strongly to the attention of the people.

We all know that this entails hard and conscientious effort on the part of all of us, wherever we are in the framework of electric operation, and we must continually rededicate ourselves to the task. Our technical work, our sales efforts, our public contacts, our rate and price policies, our financing must be ably handled.

And, to pioneer effectively through the shifting tangles and complexities of the current national and international scene, there must be a close relationship between every phase of

(*Continued on page* 387)

Accounting and Commercial Committees Prepare for Busy Year

EEI Accounting Division Committees

ANTICIPATING one of the busiest years in their history, the committees of the EEI Accounting Division are actively engaged in the development of projects which will give consideration to the major accounting problems before the industry and contribute to eventual progress and solution through intensive study and discussion.

In the face of increased operating and construction costs, the committees this year will redouble their efforts to develop methods of securing greater operating efficiency, both in the field of manpower utilization and improved accounting techniques, and will continue to provide sound interpretation of the latest regulatory practices. The committee projects for the coming year, planned at the organizational meetings held in Cincinnati, Ohio, on September 15-18, 1952, will again be carried out in conjunction with committees of the American Gas Association.

Many of the project reports are intended for presentation at the joint spring conference of electric and gas utility accountants, to be held in Chicago, Ill., in April, 1953. One or two studies, however, will be forthcoming prior to the conference, and several long-term projects, the results of which may not be available during the coming year, are also planned. The work of the various committees represents projects developed from suggestions by accounting executives or studies carried over from previous years and, except as may be indicated, are joint projects with corresponding AGA committees.

Accounting Division Executive Committee

The Accounting Division Executive Committee—including among its members ex-officio chairmen of all standing committees and executive subcommittees — supervises, guides, and approves the general program of the Accounting Division. The accounting work of the Institute is headed by E. L. CASSADY, Indianapolis Power & Light Co., as Chairman of the committee, and W. D. VIRTUE, Public Service Co. of Colorado, as Vice Chairman.

In connection with supervising the activities of the Accounting Division, the Executive Committee has set up various special subcommittees for investigating and reporting upon subjects of interest other than those matters falling within the scope of the various standing committees. The following are the subcommittees of the Accounting Division Executive Committee which will be active during the coming year:

1. *Subcommittee on Uniform System of Accounts*—Chairman, O. K. BOYD, Consolidated Gas Electric Light and Power Co. of Baltimore. After the subcommittee had reviewed the proposed revisions in the uniform system of accounts for electric utilities submitted by the NARUC Committee on Accounts and Statistics, EEI and AGA representatives met with the NARUC committee last June to discuss the industry's position on the more important points upon which disagreement still existed. Presently, an AGA committee, with ARTHUR SKELTON, The Peoples Gas Light & Coke Co., as Chairman, is cooperating with the EEI subcommittee in anticipation that changes similar to those made in the electric classification of accounts will be made applicable to gas utilities.

E. L. CASSADY
Chairman of the Accounting Division Executive Committee

2. *Subcommittee on Accounting Employee Relations*—Chairman, J. DOUGLAS ELLIOTT, The Detroit Edison Co. This subcommittee proposes to develop a long-range project on "How to Better Accounting Employee Relations by Improvement in Selection, Orientation, Training, and Developing of Supervisors," under which there will be a number of sub-projects. One of these, a sub-project on "Selection of Supervisors," will be presented at the April Conference, at which time the subcommittee plans also to repeat the open-discussion round-table session which was held at last year's meeting. In addition, there will be a presentation on "Supervisory Selection," which will be followed by a question and answer period.

3. *Subcommittee on Accounting Developments Service*—Chairman, WALTER OTT, The Cincinnati Gas & Electric Co. This subcommittee will cooperate with the other accounting committees in the divisions, and attempt to stimulate interest throughout the industry for submission of material for the Accounting Developments Service releases, which describe new equipment, improved methods, labor-saving ideas, better control procedures, etc., that make utility accounting more effective and economical. These releases are distributed to member companies as a periodic service.

4. *Subcommittee on Electronic Accounting Machine Developments* — Chairman, F. J. PORTER, JR., Consolidated Edison Co. of New York, Inc. Organized in April, 1951, for the purpose of keeping abreast of developments in electronics for application

in all fields of accounting, the subcommittee met during the past year with various manufacturers of electronic accounting machines and recently received a request from RCA to discuss a utility industry study which would determine the lowest economic limit beyond which electronic equipment being developed by RCA would have no market. The subcommittee proposes to continue keeping in touch with the machine companies already visited and any others that have made progress in this field. In order to secure data on small general-purpose computers which might have some value in specific accounting installations, the subcommittee also plans to circularize manufacturers of such equipment and to digest and summarize the information obtained for the use of the industry.

5. *Subcommittee on Cost Management Programs* — Chairman, L. G. ROEMER, Wisconsin Public Service Corp. This subcommittee, which was established in the fall of 1951 because of growing interest in better management of costs, held two one-day meetings in late 1951 and a third meeting in April, 1952. A letter of inquiry was sent to all members of the Accounting Division Executive Committee asking for brief information about their respective companies as to (1) the accounting system in use for cost-management purposes, (2) how accounting reports are utilized for these purposes, and (3) what organization exists across the company for cost control. The replies indicated an almost unanimous desire for improvement. However, it appeared that no one company has attained the outstanding degree of advancement the subcommittee had hoped to find.

The committee plans (1) to continue keeping abreast of techniques for improving cost management, possibly suggesting study of certain phases of these techniques to already existing committees or to committees which EEI may decide to create on the basis of the subcommittee's recommendations, and (2) to devote its major attention to the determination of methods used by individual companies to evaluate their overall performance, either by themselves or through comparisons of their performance with neighboring companies or companies of similar characteristics.

M. J. WALSH
Chairman of the Customer Activities Group

A graduate of South Bend College of Commerce, Chairman EDWIN L. CASSADY, Assistant to the Vice President and Treasurer and Assistant Treasurer, Indianapolis Power & Light Co., entered the electric utility field early in life. He began his career with Ipalco in 1929 and later took graduate work at Butler University evening division. Past Chairman of the Institute's General Accounting Committee, he has served on the Executive Committee of the Accounting Division since 1941 and for the last two years as its Vice Chairman. He is past Chairman of the Indiana Electric Association Accounting Section and past President of the Indianapolis Chapter of the National Association of Cost Accountants.

Application of Accounting Principles Committee

Under the vice chairmanship of R. P. KAESSHAEFER, The West Penn Electric Co. (Inc.), with chairman to be appointed, the Application of Accounting Principles Committee keeps informed on the development of accounting principles, conventions, and practices in the accounting profession, with special reference to their application to the accounting requirements of the electric industry, and attempts to promote understanding within the industry regarding the application of such developments.

The committee also serves as a point of reference when opinion is desired regarding the application to the electric industry of accounting changes proposed by professional accounting organizations, regulatory authorities or other sources. In such capacity, the committee renders advisory opinions from time to time during the year to the American Institute of Accountants and other interested bodies or groups.

It is also expected that the committee will consider the problem of accounting procedure with respect to the matter of accelerated amortization of facilities essential for the defense effort.

Customer Activities Group

The Customer Activities Group comprises three standing committees which are under the supervision of M. J. WALSH, Consolidated Edison Co. of New York, Inc., as Coordinator. These committees and their programs follow.

Coordinator M. J. WALSH, Manager, Manhattan Retail Division of the Commercial Relations Department, Consolidated Edison Co. of New York, Inc., is a native New Yorker who began his career in 1923 with Northern Union Gas Co., which later became part of the Con Ed system. Since that year, he has been associated with the companies' commercial relations work, except for four years spent as a Lieutenant Colonel in the field artillery serving in the Pacific. For a brief period in 1949, he was a consultant to the Mexico Light & Power Co. in Mexico City. Before receiving his present EEI post, he served for two years as Chairman of the Customer Accounting Committee. He has also been active in the American Gas Association and is a member of the System and Procedures Association of New York.

Customer Accounting Committee— Chairman, G. F. HIGGINS, The Detroit Edison Co.; Vice Chairman, S. A. COLE, New York State Electric & Gas Corp. The committee is continuing work on four previously assigned long-range studies. The project on "Directory of Customer Accounting Methods and Equipment" has been reactivated to bring the directory up to date; the projects on "Filing Equipment and Methods" and on "Improving Meter Reading Efficiency" are being continued; and the Subcommittee on Customer Accounting Methods and Equipment, nearing completion of its study on "Preparation of Meter Readings for Billing," is considering an additional project.

In addition, three new studies entitled "Measurement of Job Performance," "Methods and Effects of Rerouting," and "Methods for Control and Balancing of Accounts Receivable" have been assigned. Material resulting from these projects is intended for presentation at the annual spring conference or for interim distribution.

Chairman GEORGE F. HIGGINS, General Office Supervisor, The Detroit Edison Co., graduated from the University of Detroit in Business Administration. A native of Detroit, he joined Detroit Edison in 1926 as a clerk in the auditing department and in 1934 was named

G. F. HIGGINS
Chairman of the Customer Accounting Committee

group supervisor in the meter reading department, advancing to his present position in 1941.

Customer Collections Committee—Chairman, DUDLEY ARNOLD, Pennsylvania Power Co.; Vice Chairman, T. C. EICKMEYER, The Dayton Power and Light Co. The committee has assigned four project committees on "What is the Justification for Reconnection Charges, Forfeited Discounts on Delayed Payment Charges, Collection-Call Charges;" "Should Collectors Be Added to Reduce Uncollectibles;" "Merchandise Credit Policies and Financing;" and "Effective Off-System Collection Methods." In addition, the committee has been working for the past several years on the long-range project known as "The Credit Picture," a semi-annual compilation of material and statistics for representative electric and gas companies which appears in the AGA and EEI monthly magazines.

In connection with the spring accounting conference and in line with the usual presentations, the committee is planning two major subjects, one for the second day and one for the third day of the conference, with a panel discussion and luncheon on the second day. Consideration is also being given to developing a subject for the panel session in which the three customer activities committees will participate.

Chairman DUDLEY M. ARNOLD, Assistant Secretary and Assistant Treasurer, Pennsylvania Power Co., was born and educated in England and came to this country in 1928, beginning his employment with Pennsylvania Power as a clerk in the rate department that same year. He became chief clerk of the customers accounting department in 1929, division auditor in 1936, general supervisor of customers accounting in 1942, and assumed his present position in 1949. Past President of the Western Pennsylvania Personnel Association and past Chairman of the Office Equipment and Accounts Committee of the Pennsylvania Electric Association, he is Secretary and Treasurer of the Board of the Margaret Henry Home for Children and has been active in other civic groups.

Customer Relations Committee—Chairman, C. J. BERNER, Wisconsin Electric Power Co.; Vice Chairman, T. J. PETERSON, The Detroit Edison Co.

The committee will devote its activities in the coming year to the following projects: "Evaluating Customer Attitudes" (long-range), with the 1953 phase devoted to company-conducted opinion surveys, including methods, results, questionnaires, and exhibits; "Customer Correspondence" (long-range), with a complete analysis of the several approaches; "Techniques of Handling High Bill Complaints," both before and after the fact; "How Do Customer-Contact Employees Talk to Customers About Rate Increases;" "Keeping Customers Informed About Restoration of Services in Emergencies;" and "Handling Season Peaks" in lighting and turning off space-heating equipment.

The long-range project on "Training by Manual and by Film" is expected to be in the producer's hands within a short period, and it is hoped that at the time of the next planning meeting sufficient progress will have been made to present a detailed report on the project and some of the proposed film to the committee.

In addition, two committee members are to participate in the panel discussion of the Customer Activities Group at the spring conference.

Chairman CLARENCE J. BERNER, Assistant Auditor in Charge of Customer Contacts, Wisconsin Electric Power Co., studied accounting and allied subjects at Marquette University. Joining Wisconsin Electric Power in 1925 as accounts information clerk, he advanced to assistant collection supervisor, collection supervisor, assistant auditor of customer accounts in charge of production, and assumed his present position in 1947. He is past President of the Milwaukee Retail Credit Association, past President of the 13th district of the National Retail Credit Association, and past Chairman of the Customer Relations Committee of the Wisconsin Utilities Association.

DUDLEY ARNOLD
Chairman of the Customer Collections Committee

C. J. BERNER
Chairman of the Customer Relations Committee

Depreciation Accounting Committee

With G. T. LOGAN, Philadelphia Electric Co., as Chairman, and C. N. RICE, JR., Northern States Power Co., as Vice Chairman, the Depreciation Accounting Committee hopes to deal with the question of "Accounting for Replacement Cost of Property," a subject of wide-spread interest to the industry, and plans to report on it as one of the major items for consideration at the afternoon session on the second day of the spring accounting conference. The long-range project on "How to Compute Depreciation Accruals and Reserve Determinations," a supplement to the booklet on *Methods of Estimating Utility Plant Life* released in April, 1952, entails considerable work and will probably not be completed this year.

A report summarizing the 1952 Court and Commission Rulings on Depreciation, similar to a previous report, will be presented at the spring conference, and the committee is also planning a conference session jointly with the Plant Accounting Committee, as it did at the 1952 meeting.

A subcommittee has been working in cooperation with the Subcommittee on Uniform System of Accounts of the Executive Committee on matters

GEORGE T. LOGAN
Chairman of the Depreciation Accounting Committee

A. R. ST. BERNARD
Chairman of the General Accounting Committee

A. I. RUSSAK
Chairman of the Internal Auditing Committee

E. D. KING
Chairman, Plant Accounting and Records Committee

relating to the review of the depreciation sections of the proposed NARUC Uniform System of Accounts and most recently in connection with the revised definition of depreciation. Another project on "Value of Depreciation," strictly for committee consumption and report within the committee, is nearing completion.

Committee Chairman GEORGE T. LOGAN is Technical Assistant of the Philadelphia Electric Co. and Assistant Treasurer of the Conowingo Power Co. After graduating from MIT in 1929 as a civil engineer, he joined The Koppers Construction Co. as a cost engineer in connection with the construction of by-product coke and gas plants. Becoming associated with Philadelphia Electric in 1928, he worked on determination of the original cost of the Conowingo Project and since then has been employed by the company in various financial capacities. He is a member of Financial Analysts of Philadelphia, instructor at the evening college of Drexel Institute of Technology, past President of the MIT Club of Philadelphia, and is active in civic organizations.

General Accounting Committee

The General Accounting Committee, under the chairmanship of A. R. ST. BERNARD, The Cleveland Electric Illuminating Co., with C. T. DWIGHT, The Hartford Electric Light Co., as Vice Chairman, presently has five subcommittees working on the program for the coming year.

The Subcommittee on Financial Reporting, a continuing project that analyzes reports to stockholders, has a study ready for distribution which compares differences between this and a similar study completed last year, dealing with what has transpired in the interim and what is developing at the present time. Another subcommittee will consider the matter of internal reports to management, a study of 20 member companies in 15 categories, to be worked up as a spring conference project. The Subcommittee on Capitalization of Indirect Costs hopes to have at least one presentation for the spring conference, and the Subcommittee on Budgeting and Forecasting is considering a project on "Do's and Don't's for Budgeting and Forecasting for Utilities." The latter group hopes to develop a panel discussion for the spring conference, touching on budgeting or forecasting as it is used in presentation of rate cases to regulatory commissions, and the Subcommittee on Methods and Procedures is planning a report on some phase of its methods work. The general subject of accounting techniques has been referred to the Subcommittee on Cost Management Programs of the Accounting Division Executive Committee. Under this heading, however, a subcommittee of the General Accounting Committee expects to consider three projects, namely, handling of small tools, separation of work between purchasing departments and accounting departments in handling of invoices, and clerical cost control affecting accounting departments.

LOUIS F. SCHOLLEY
Chairman of the Taxation Accounting Committee

Chairman A. R. ST. BERNARD, Chief Accountant, General Accounting Department, The Cleveland Electric Illuminating Co., is a native Clevelander with training at Cleveland College, Dyke School of Commerce, and Ohio University. He has been with the company for 19 years, having served in various accounting capacities and before his appointment to his present post in 1951 held the position of assistant chief accountant for six years. He is a member of the Cleveland Chamber of Commerce, the City Clubs of Cleveland, and the National Association of Cost Accountants, serving as Director of the Cleveland Chapter.

Internal Auditing Committee

Headed by Chairman A. I. RUSSAK, The Cincinnati Gas & Electric Co., and Vice Chairman L. D. BRUMIT, Florida Power Corp., the Internal Auditing Committee plans to present, in conjunction with the comparable AGA committee, a three-session program for the spring conference. On the day following the general session, three papers will be offered, two of which will deal with "Accounting Techniques Required on Responsibility Accounting" and "Cost Per Coverage in Construction Billing." At the afternoon session, "Problems Involved in Internal Auditing" are to be discussed by an outside speaker, followed by a question and answer period. A panel discussion, very effective last year, will be repeated at the morning

session on the third day of the conference.

A long-range project consisting of writing and distributing manuals on audits of various subjects for the public utility industry constitutes the main work of the committee. At the present time, five manual sections have been written, three of which are expected to be released some time this year. The other two sections are to be edited and released later this year or at the spring conference. Another section constituting the "Audit Manual on Property Records," it is hoped, will also be completed during the accounting committee year.

The Internal Auditing Committee will carry over the project on "Case Studies" again this year and expects to continue the publication and distribution, from time to time, of additional auditing case studies. Another project, which is a continuing study, includes a report on "Auditing of an Insurance Department."

Chairman A. I. RUSSAK, Supervisor of the Internal Auditing Department, The Cincinnati Gas & Electric Co., was born in Texas City, Tex., and gained his commercial engineering degree from the University of Cincinnati in 1924, at which time he joined CG&E as a special clerk in the customers accounting department. Following a series of accounting responsibilities, he was named to his present position in 1944. A past President of the Cincinnati Chapter of the Institute of Internal Auditors and a present member of the group's Board of Governors, Mr. Russak is also Chairman of the Auditing Committee of the Mutual Benefit Credit Union and Chairman of the Finance Committee of the Mutual Benefit Association.

Plant Accounting and Records Committee

Headed by Chairman E. D. KING, The Detroit Edison Co., and Vice Chairman C. W. KELSEY, New York State Electric & Gas Corp., the Plant Accounting and Records Committee has named four subcommittees to take care of its program for the year, including the spring conference sessions.

A subcommittee has been formed to arrange a half-day panel session, tentatively scheduled for the morning following the general session of the conference. A Subcommittee on Mass Property Units of Inside Plants plans to prepare a paper concerning details of inside plant accounts which should be handled more like mass units and which require tremendous work in itemization but represent a relatively small portion of the total cost. The Subcommittee on Annual Reports by Plant Accounting Departments will present a paper on "Reporting to Management," which will discuss the form of such an annual report as far as plant accounting is concerned.

The committee is planning a joint session with the Depreciation Committee on the third morning of the conference, similar to last year's session, and has designated two representatives from this group to head up a subcommittee for that purpose.

Chairman E. D. KING, Property Engineer, The Detroit Edison Co., became associated with the company immediately after graduating from the University of Michigan in 1915. He was appointed assistant property engineer in 1922 and was named to his present post as department head in 1950. Mr. King's related activities include membership in the Engineering Society of Detroit, Detroit Economic Club, and National Association of Cost Accountants.

Taxation Accounting Committee

With L. F. SCHOLLEY, The Cleveland Electric Illuminating Co., as Chairman, and S. J. SCHIML, The Dayton Power and Light Co., as Vice Chairman, the Taxation Accounting Committee plans two closed sessions between now and the spring conference and will formalize its program at the conference-planning meeting in February.

Presently, three subcommittees are working on matters of new regulations, watching developments along that line; proposals for new legislation, certain of which have currently been considered by the Institute's Special Tax Policy Committee; and fringe benefits, upon which a report is anticipated at the spring conference. The committee will consider providing a speaker for one of the conference sessions, if deemed necessary.

Chairman LOUIS F. SCHOLLEY, Assistant Controller, The Cleveland Electric Illuminating Co., graduated from New York University in 1922. He became a certified public accountant in Ohio in 1926 and entered the employ of CEI in 1934, where he has been assistant controller since 1945. Mr. Scholley is a member of numerous accounting organizations, including the American Institute of Accountants, Ohio Society of Certified Public Accountants, and Electric Utility Accountants of Ohio.

EEI Commercial Division Committees

TAILORING their programs for the year to the requirements of electric company sales activities, the Commercial Division Committees are prepared to provide assistance in a variety of ways to long-range development of sales organizations and to current selling campaigns.

With the anticipated reduction in defense spending, coupled with an unprecedented expansion of electric company generating facilities, commercial programs take on greater importance than ever before, as electric company sales organizations work to provide continuous healthy load growth under whatever economic conditions may prevail.

The shortage of sales personnel, in addition to mounting costs of operation, is placing new emphasis on the need for better methods and new techniques in the field of mass selling.

These represent important basic considerations which are shaping the thinking of the Commercial Division Committees, whose personnel will endeavor to provide materials and plans for the use of member companies.

Activities of individual committees include the development of new sales aids, preparation of market studies, reporting on successful campaigns, and the distribution of a variety of sales material. With the need for keeping sales organizations at a high level of efficiency and readiness, sales training is being emphasized in committee work.

With a total enrollment of some 330, the 20 Commercial Division Committees draw their participants from EEI member companies throughout the nation. Contributing freely of their time, energy, and expert knowledge, these committee workers have given valuable assistance to the advance of the industry.

Commercial Division General Committee

The Commercial Division General Committee, under the chairmanship of J. R. HARTMAN, The Cincinnati Gas & Electric Co., coordinates the work of the division's five sections—Commercial Sales, Farm, Industrial Power and Heating, Residential, and Special Service—whose areas of responsibility cover the major electrical markets,

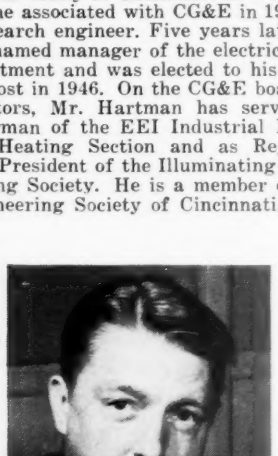
as well as special considerations such as sales methods, training, and wiring.

The section chairmen are under the supervision of Mr. Hartman, who conducts meetings of the Commercial Division General Committee twice a year in order to plan division activities and consider projects being undertaken by the committees.

This year marks the appearance of the Special Service Section, newly formed of the Sales Personnel and Training Committee and the Wiring and Specifications Committee, previously under jurisdiction of the Commercial Division General Committee, and the Merchandising Committee, formerly part of the Residential Section. With this organizational change, it is felt that the work of these three groups can be better coordinated.

In addition to guiding the activities of the sections, the Commercial Division General Committee will this year have these subcommittees: the Residential Heating Subcommittee, under the chairmanship of F. A. COMPTON, The Detroit Edison Co.; the Health Home Task Committee, under Chairman E. O. GEORGE, The Detroit Edison Co.; and a subcommittee to consider future promotional programs.

Chairman J. R. HARTMAN, Vice President in Charge of Electric Sales, The Cincinnati Gas & Electric Co., received his chemical engineering degree from the University of Cincinnati in 1920 and became associated with CG&E in 1923 as a research engineer. Five years later he was named manager of the electric sales department and was elected to his present post in 1946. On the CG&E board of directors, Mr. Hartman has served as Chairman of the EEI Industrial Power and Heating Section and as Regional Vice President of the Illuminating Engineering Society. He is a member of the Engineering Society of Cincinnati.



S. S. SANSBURY
Chairman of the Commercial Sales Section

J. R. HARTMAN
Chairman of the Commercial Division General Committee

COMMERCIAL SALES SECTION

The Commercial Sales Section, under the chairmanship of S. S. SANSBURY, Union Electric Co. of Missouri, is composed of the Commercial Cooking Committee, Commercial Lighting Committee, Market Development and Electrical Applications Committee, and Street Lighting Coordination Committee.

With a membership of approximately 60 representatives from 35 electric companies, these committees develop sales and technical data; publish reports; sponsor national meetings; and formulate and produce informational, promotional, and sales materials to assist development of commercial markets.

Chairman S. S. SANSBURY, Manager of the Development and Training Division, Union Electric Co. of Missouri, graduated from the University of Alabama and began his career with the company in 1930, serving in various capacities in the sales department. An anti-aircraft battery commander in the Pacific during World War II, he is a member of the Engineers' Club of St. Louis, past chairman of a training committee of a Community Chest division, and has been active in other civic, business, and charitable organizations. Before receiving his present EEI committee appointment, he served from 1949 to 1952 as Chairman of the Commercial Cooking Committee.

Commercial Cooking Committee

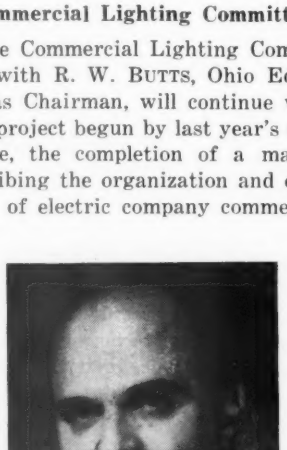
The Commercial Cooking Committee, under the chairmanship of E. P. WERLEY, Pennsylvania Power & Light Co., will continue to publish reference material, develop technical data and sales and promotional aids, and cooperate with allied industries and organizations to stimulate commercial market activity. As it has in the past, the committee will also publish commercial cooking data sheets (a series of 12 during 1952-1953), sponsor the annual one-day Commercial Cooking Conference in conjunction with the National Restaurant Show in Chicago in May, 1953, and work toward an effective chain-store contact program.

The committee plans to publish a new information sheet, consisting of three or four issues during the coming year, which will highlight commercial cooking industry programs, sales stories, new equipment, cooking data, sales tools, etc. The formation of a commercial cooking bureau as well as regional or inter-area groups of commercial cooking specialists and utility salesmen for the exchange of ideas and information are also proposed.

Chairman E. P. WERLEY, Manager of the Commercial Sales Department, Pennsylvania Power & Light Co., became associated with PP&L as a sales assistant immediately upon graduating from Lehigh University in 1930 and the following year was named a gas salesman at Sunbury, Pa. Six years later he left the company but in 1945, after service as a Commander in the U. S. Navy during the war, was re-employed by PP&L as a sales planning representative, rising to his present position in 1947. Active in business, civic, and religious organizations, he is Vice Chairman of the Commercial Committee of the Pennsylvania Electric Association and is a member of the Illuminating Engineering Society.

Commercial Lighting Committee

The Commercial Lighting Committee, with R. W. BUTTS, Ohio Edison Co., as Chairman, will continue work on a project begun by last year's committee, the completion of a manual describing the organization and operation of electric company commercial



E. P. WERLEY
Chairman of the Commercial Cooking Committee

R. W. BUTTS
Chairman of the Commercial Lighting Committee

lighting sales departments, and will continue to maintain contacts with allied groups in the commercial lighting field.

The committee will also initiate a series of commercial lighting sales bulletins for the purpose of keeping member companies informed of successful sales operations, campaigns, and equipment developments. In addition, revision of the planned lighting layout form is planned, as well as development of four new planned lighting mailing pieces for stores and two for offices.

Born and educated in Ohio, Chairman ROBERT W. BUTTS, General Supervisor of Commercial Sales, Ohio Edison Co., began his career with the Ohio Public Service Co. in 1922 and was director of commercial sales and home service when the company was merged into Ohio Edison in 1950. For years he maintained his home in Elyria, where he was active in service club work, civic affairs, and Boy Scout activities, for which he was awarded the Silver Beaver honor in 1948. A winner of the Curtis Award for Lighting in 1937, he is past National Membership Chairman of the Illuminating Engineering Society and a past Chairman of the Society's Cleveland Section.

Market Development and Electrical Applications Committee

The Market Development and Electrical Applications Committee, headed by R. DEWITT PIKE, Rochester Gas and Electric Corp., plans to issue a new electric heat section for the handbook, *Applications of Electric Equipment in Commercial Establishments*, which was completed by last year's committee and is currently being published.

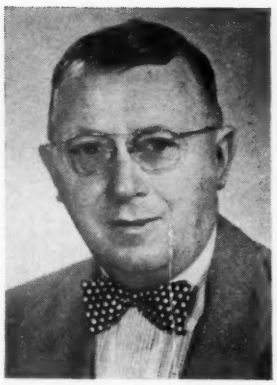
Among the other projects being considered by the committee are a new load and reference study of apparel shops, a market analysis of low-use commercial customers, and a series of bulletins on new commercial electrical applications. The committee will continue the evaluation study of commercial sales policies and methods undertaken by the previous committee and is considering a study on "mass selling the commercial market," which will make recommendations on effective programs that can be used in promoting commercial electrical modernization.

Upon graduation from the University of Rochester as a mechanical engineer in 1927, Chairman R. DEWITT PIKE, Manager of the Commercial and Industrial Sales Department, Rochester Gas and Electric Corp., joined Rochester G&E and until 1945 served as refrigeration and air-conditioning engineer in the industrial department. In 1945 he was assigned the organization of the company's first commercial sales division, which he served as supervisor until appointment to his present position in 1950. A licensed professional engineer in New York State, Mr. Pike is a Director of the American Society of Refrigeration Engineers and during World War II served as an engineering instructor in the U. S. Navy V-12 Program at Rochester University. He has been a member of the Institute's Market Development and Electrical Applications Committee since 1949.

Street Lighting Coordination Committee

With C. E. WALDRON, Niagara Mohawk Power Corp., as Chairman, the Street Lighting Coordination Committee will maintain liaison with the EEI Transmission and Distribution Committee and the NEMA Standardization Section in order to effect, wherever possible, standardization of street lighting equipment. The committee also plans to survey the industry's interest in and need for street

R. DEWITT PIKE
Chairman of the Market Development and Electrical Applications Committee



C. E. WALDRON
Chairman of the Street Lighting Coordination Committee

lighting sales aids, develop a set or series of 2-in. by 2-in. slides for use as street lighting educational material, and complete and publish the biennial Street Lighting Report.

Chairman CHARLES E. WALDRON, born in Schenectady and a Union College graduate, was a street lighting specialist with General Electric Co. during the years 1920-1928, at the end of which time he joined the street lighting department of the New York Power and Light Corp. Since 1936, he has been Street Lighting Advisor in what is now Niagara Mohawk Power Corp.'s Eastern Division. A member of the Illuminating Engineering Society, he is Chairman of the newly formed IES Chapter for Eastern New York. He also holds membership in the Albany Society of Engineers, Society of American Melding Engineers, and National Ski Patrol.

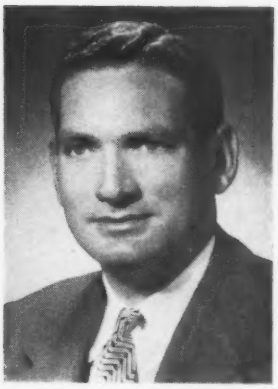
FARM SECTION

The responsibilities of the Farm Section, under the chairmanship of E. D. SMITH, The Dayton Power and Light Co., are divided into farm utilization of electricity, agricultural development, and rural youth activities. Consisting of three committees, the section as a unit publishes *Farm Electrification* magazine and is also responsible for collecting and distributing other pertinent information relating to rural electrification.

Following is a summary of the projects planned by the committees of the Farm Section, which is composed of the Agricultural Development Committee, Farm Utilization Committee, and Rural Youth Committee.

Chairman E. D. SMITH, Supervisor of the Rural Department, The Dayton Power and Light Co., was graduated from Ohio State University in 1926. He joined DP&L as district lighting representative in 1928 and two years later transferred to rural work, advancing to his present position in 1945. Before receiving his

E. D. SMITH
Chairman of the Farm Section



BUD S. MOSS
Chairman of the Agricultural Development Committee

M. O. WHITHED
Chairman of the Farm Utilization Committee

A. G. MAYER
Chairman of the Rural Youth Committee

new Institute assignment, Mr. Smith served as a member of the EEI Farm Utilization Committee for six years, holding the post of chairman for the past two years. He is a member of the American Committee of the Ohio Farm Electrification Council, the Joint Planning Committee of Electric Water Systems Council, and the Farm Sales Committee of The Ohio Electric Utility Institute.

Agricultural Development Committee

The Agricultural Development Committee, under the chairmanship of BUD S. MOSS, Georgia Power Co., is completing an extensive study of electric company farm activities in agricultural development, farm utilization, rural youth, and research. This study will be published in the form of a report that will cover the scope of all Farm Section activities and will contain a summary list of projects that have recently been conducted by electric companies.

The committee is planning to make a study of the various types of farm electrification demonstration panels and models that are being used at fairs and at meetings of youth groups. The committee also proposes to collect pictures or illustrations of farm electrification billboards and window exhibits. This information will be published as a reference booklet to help rural service men in planning similar activities.

Chairman BUD S. MOSS, Manager, Rural Department, Georgia Power Co., has been associated with the rural activities of his company since 1946, having served as rural engineer in addition to the position he now holds. A graduate of the University of Georgia, he has been a member of the Agricultural Development Committee for four years and is also active in a number of other organizations, among them the Southeastern Electric Exchange and American Society of Agricultural Engineers.

Farm Utilization Committee

Under the chairmanship of M. O. WHITHED, Atlantic City Electric Co., the Farm Utilization Committee is planning to publish an *Engineering Handbook for Farm Electrification*. Designed for use by rural service men and others interested in the relation of agriculture to electricity, the book will contain engineering data pertinent to planning, constructing, and installing many types of electrical equipment. At the present time, the committee finds it necessary to search through many separate references to find information of this nature. The book will probably require at least two years for completion and is expected to be one of the most valuable of its kind in the field.

The committee is planning to prepare and publish a new section on irrigation for the *Farm Electrification Manual* and proposes to start work on two more new sections. It will also revise at least one old section and begin revision of two or three others.

A graduate of Powers Institute in 1929 and Bliss Electrical School in 1931, Chairman MARDIS O. WHITHED, Rural Supervisor, Atlantic City Electric Co., was foreman of a 400-acre dairy and sheep farm before joining the company in 1935 as a groundhand. Following service in meter testing and in the commercial department, he transferred to the rural department, upon its formation in 1937 and in 1951 was named to his present position. An associate member of the New Jersey Society of Professional Engineers, Mr. Whithed has been active in numerous electrical and agricultural associations. He is Chairman of the Farm Wiring Committee, North Atlantic Section, American Society of Agricultural Engineers, and has been a member of the Institute's Farm Utilization Committee since 1949.

Rural Youth Committee

The Rural Youth Committee, whose Chairman is A. G. MAYER, The Washington Water Power Co., is planning to publish a looseleaf booklet which will contain pictures, illustrations, and working drawings showing how to build or assemble such items as electrically operated drill presses, portable motors, motor drives, etc. This booklet should prove a valuable electrical project reference source for farm youth.

The committee also plans to make a survey of 4-H and Vo-Ag programs being conducted by electric companies.

Chairman A. G. MAYER, Manager of the Agricultural Department, The Washington Water Power Co., has had a varied career since he joined the company in 1932, having served as lineman, salesman, and sales manager before attaining his present position. He has been a member of the Rural Youth Committee for four years and is also active in local business and civic groups.

INDUSTRIAL POWER AND HEATING SECTION

Under the chairmanship of MAXWELL COLE, Philadelphia Electric Co., the Industrial Power and Heating Section has the following primary responsibilities:

1. To assist all branches of the electric industry in the development of new applications of electricity to industrial processes and to secure widest possible acceptance and use of these applications.

2. To provide a clearing house where data on sales policies and programs can be assembled, analyzed, and

MAXWELL COLE
Chairman of the Industrial Power and Heating Section

made available to other utilities for their assistance and guidance in formulating and administering their own sales policies and programs.

3. To keep abreast of all types of competition, to analyze them, and to assist electric companies in meeting them.

4. To provide a forum where individual problems may be discussed and the electric companies facing them may have the benefit of the experience of other companies in similar situations.

The committees of the section anticipate a busy year. Several sections of the *Power Sales Manual* are being revised and new ones written in order to keep the manual a comprehensive and up-to-date tool for power salesmen. Major considerations, such as competition in all of its forms, are being kept under close scrutiny, and the section is working with manufacturers on several equipment problems. Stepped-up sales and promotional programs, as well as increased activity in the industrial development field, are being carefully analyzed and members kept advised. The section will also continue to operate in the development of the Industrial Electrification Council and with the organization responsible for celebration of Light's Diamond Jubilee.

Following are the maior assignments of the committees of the Industrial Power and Heating Section.

Chairman MAXWELL COLE is Manager of the Market Studies and Service Division of the Philadelphia Electric Co. A graduate of the United States Naval Academy, he began his affiliation with the Philadelphia Electric Co. in 1924 and has served the company in various positions, including that of supervisor of the industrial service section. A member of the Illuminating Engineering Society, he has served 13 years with the EEI Industrial Power and Heating Section.

Competitive Service Committee

The Competitive Service Committee, of which PAUL W. MCCORMICK, Union Electric Co. of Missouri, is Chairman, functions through the Steam Competition Subcommittee and the Diesel and Other Competition Subcommittee.

In line with the committee's general purpose—that of collecting, correlating, and distributing information on competitive services—these two subcommittees will continue to make surveys dealing with competitive conditions affecting the industry. The subcommittees will also continue to keep a running record of competitive situations and will develop and distribute information pertaining to outstanding changes in manufacturing processes involving changes in steam requirements, automatic diesel engine operation, gas and dual fuel engines for sewage disposal, gas turbines, etc.

In addition, consideration will be given to revision of Part C (Steam Engines and Turbines) of Section IX on "Competition" of the *Power Sales Manual*.

Chairman PAUL W. MCCORMICK, Industrial Sales Manager, Union Electric Co. of Missouri, is a native St. Louisian who, after receiving his electrical engineering degree from the University of Missouri in 1923, joined the company as a student engineer. Following service in various industrial engineering positions, he gained his present post in 1948. Since that year, Mr. McCormick has also been active in the EEI Industrial Power and Heating Section, holding subcommittee chairmanships before receiving his present assignment. An active member of the Sales Managers Bureau of the Chamber of Commerce of Metropolitan St. Louis and of the St. Louis Electrical Board of Trade, he is a director of the Utilities Savings and Loan Association.

PAUL W. MCCORMICK
Chairman of the Competitive Service Committee

G. S. YOUNG
Chairman of the General Power and Heating Committee

General Power and Heating Committee

The function of the General Power and Heating Committee, under the chairmanship of G. S. YOUNG, Kansas City Power and Light Co., is to study and distribute information on industrial power uses and to study markets for the purpose of increasing sales, as well as to coordinate activities with other utilities and manufacturers for the development of more effective sales policies and methods. It operates through four subcommittees.

The Electric Heating Subcommittee, with GEORGE E. DUERR, West Penn Power Co. as Chairman, is revising the sections of the *Power Sales Manual* devoted to electric heating applications. It will also continue to report on developments and applications of industrial electric heat, cooperate with electric heating equipment manufacturers in organizing a school for the training of power salesmen to promote industrial electric heating loads, and assist in the initial work of the Industrial Electrification Council.

The Applications and Equipment Subcommittee, under the chairmanship of S. A. MOORE, Public Service Electric and Gas Co., collects and distributes information on new applications of electric energy and equipment to industrial processes and has in preparation the revision of Section VII, "Air Conditioning and Ventilating" and Section XIV, "Electric

RAY W. WYMAN
Chairman of the Industrial Lighting Committee

R. J. MILLER
Chairman of the Residential Section

M. R. NORTON
Chairman of the Dealer Coordination Committee

H. H. BRENAN
Chairman, Electric Kitchen and Laundry Committee

Welding," of the *Power Sales Manual*.

The Industrial Development and Markets Subcommittee, with R. J. GEORGE, Consolidated Gas Electric Light and Power Co. of Baltimore, as Chairman, maintains liaison with the Area Development Committee and reports on methods and programs of various industrial development activities that are pertinent to the electric utility industry.

The Sales Policies and Methods Subcommittee, under the chairmanship of J. B. TAYLOR, Atlantic City Electric Co., studies and distributes data pertaining to sales policies and methods in the industrial power field. It is responsible for keeping assigned sections of the *Power Sales Manual* up to date, cooperating in the formation and activity of the Industrial Electrification Council, securing industrial contributions to the *Sales Planner*, keeping sales aids current, and maintaining contact with manufacturers on their promotional programs.

Chairman G. S. YOUNG, Manager of Power and Lighting Sales for the Kansas City Power & Light Co., has been with the company for 26 years, having served also as industrial engineer and assistant manager of power sales. A graduate of the University of Missouri, he is active in the Electric Association of Kansas City, the Missouri Valley Electric Association, and the Engineers' Club of Kansas City.

Industrial Lighting Committee

The Industrial Lighting Committee, under the chairmanship of R. W. WYMAN, The Cleveland Electric Illuminating Co., will collect and review all promotional material available on industrial and protective lighting and will cooperate in the production of new material for industrial lighting promotional programs. Such material that is outstanding will be made available to member companies.

Industrial lighting programs under the auspices of lamp manufacturers will continue to be fostered and encouraged by the committee for the benefit of industrial power salesmen of member companies. The committee will also participate in developing and promoting plans for celebration of Light's Diamond Jubilee in 1954.

Chairman RAY W. WYMAN, Manager of Industrial Sales, The Cleveland Electric Illuminating Co., has performed the duties of commercial representative, industrial representative, supervisor of industrial sales, and assistant to the industrial sales manager since joining the company in 1937. He received his B. S. degree in electrical engineering from the Case Institute of Technology and has been active in the Cleveland Engineering Society, Association of Iron and Steel Engineers, and Illuminating Engineering Society. He has served on the Industrial Lighting Committee for the last three years.

RESIDENTIAL SECTION

The Residential Section, under the chairmanship of R. J. MILLER, The Cleveland Electric Illuminating Co., is made up of six committees, whose activities include the collection, development, and dissemination of educational material on residential promotion for electric company use.

Working with NEMA, the committees as a group are developing a promotional calendar which, it is hoped, will better coordinate the over-all sales promotional efforts of the entire electric industry. Similarly, individual committees of the section are keeping in close contact with committees of other trade associations in an effort to develop specific coordinated activities.

Educational and promotional material for consumer and classroom use are developed by the committees, and complete promotional programs, such as those of the Electric Kitchen and Laundry Committee, are prepared for long-term company use at the local level. Special reports are also issued to inform electric company sales management on a wide range of residential activities.

A graduate of John Carroll University, Chairman R. J. MILLER, Assistant to the General Sales Manager, The Cleveland Electric Illuminating Co., began his career with the company in 1936, serving as guild representative, residential sales supervisor, and assistant manager of residential sales before assuming his present duties. A member of the Board of Directors of the Electrical League of Cleveland, Mr. Miller is also Vice Chairman of the EEI Commercial Division General Committee and has served as Chairman of the EEI Sales Personnel and Training Committee.

Dealer Coordination Committee

The Dealer Coordination Committee, under the leadership of M. R. NORTON, Wisconsin Power and Light Co., will continue to sponsor the dealer-utility workshops which have been successfully conducted on a regional basis for the past two years. All electric companies in each region are invited to share in this activity by sending their representatives in charge of dealer activities to the meetings, where papers on various types of dealer coordination are presented. The workshop phase develops during discussion periods which are provided for in each program.

During the coming year, résumés of

the material covered at individual workshops will be made available to the electric industry in the form of an "idea" portfolio.

The committee has been working with NEMA on the development of the promotional calendar which, it is hoped, will be adopted by manufacturers for the timing of their promotions of major appliances. The committee will also continue its liaison with NARDA.

Chairman M. R. NORTON is Dealer Sales Promotion Manager of Wisconsin Power and Light Co. His previous experience with the company, which he joined in 1932, includes service as district salesman, sales supervisor, and rural sales manager. A Bachelor of Science graduate of Beloit College, he took graduate work at the University of Chicago and the University of Wisconsin. He has been a member of the Dealer Coordination Committee for three years and is also Secretary-Treasurer of the Central Wisconsin Adequate Wiring Bureau.

Electric Kitchen and Laundry Committee

The Electric Kitchen and Laundry Committee, with H. H. BRENAN, Pennsylvania Power & Light Co., as Chairman, will continue to develop promotional material for adoption by electric companies at the local level.

For the present, much of the committee's time and effort will be devoted to the sale and use of the Mother-Daughter Program, which was released last spring and consists of hard-hitting, inexpensive, point-of-sale material for use by electric companies and dealers. New material to be produced by the committee will give long-range support to the program.

Following his graduation from the Massachusetts Institute of Technology in 1925, Chairman HUGH H. BRENAN, Manager of the Residential Sales Department, Pennsylvania Power & Light Co., was employed by the Equitable Gas Co. until 1928, when he accepted the newly created post of industrial gas engineer with PP&L. In 1934 he was transferred to the company's residential sales department as sales specialist of residential electric and gas applications, rising in 1940 to sales promotion supervisor and in 1944 to his present position. A past Chairman of the Residential Committee of the Pennsylvania Electric Association, he has been a member of the Institute's Electric Kitchen and Laundry Committee since 1946.

IVER C. DIXON
Chairman of the Electric Water Heating Committee

Miss ELIZABETH WILLIAMS
Chairman of the Home Service Committee

Electric Water Heating Committee

The Electric Water Heating Committee, whose Chairman is IVER C. DIXON, Atlantic City Electric Co., has discontinued its technical studies and will confine its efforts to the promotional phase of electric water heating. It will, however, continue to work toward a change in FHA specifications which will make it easier to sell electric water heaters in certain areas.

The committee is now working on a program designed to stimulate greater interest in electric water heater sales on the part of plumbers and to help plumbers develop better sales stories. A low-cost 16-mm sound motion picture for use at the consumer level is also being prepared on the basis of a survey which indicated wide need for and acceptance of such a promotional idea by electric companies.

In addition, the committee will continue to develop a list of promotional aids which are available to electric companies for use in furthering electric water heater sales.

After attending Lima Business College, Chairman IVER C. DIXON, Commercial Manager, Atlantic City Electric Co., joined the Ohio Power Co., a member of the American Gas and Electric System, as a bookkeeper in 1922. He subsequently spent 12 years on the road as an auditor for the parent organization and during the course of this work was given a temporary assignment with Atlantic City Electric in 1936. Mr. Dixon, however, remained with the New Jersey company as supervisor of consumers accounting and in 1938 was named manager of residential sales, rising to his present position in 1945. Active in civic affairs, he was one of the original members of the EEI Market Development Committee formed in 1944 and in 1949 became a member of the Institute's Electric Water Heating Committee.

Home Service Committee

While the scope of the Home Service Committee, under the chairmanship of Miss ELIZABETH WILLIAMS, Monongahela Power Co., includes a wide range of educational activities, its first purpose is to aid in the development of load-building programs through home service.

The New Cook's Book, on which the committee has been working for some time, will be ready for publication early next year and will fill the need for a cookbook dealing with basic and elementary fundamentals of cooking for use by the new cook.

Regional meetings of home service directors will be held to further the discussion of departmental operations and promotional ideas among this group, and the *Home Service Exchange* will be published on a quarterly schedule. This publication will include information on specific home service activities and certain educational and promotional material prepared by other residential committees.

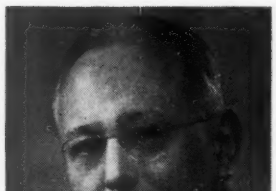
Miss Williams will continue to represent the Institute on the ASA Study Committee dealing with the adoption

D. E. BOOTES
Chairman of the Residential Lighting Committee

GEORGE L. LAHODNY
Chairman of the Television Committee

J. M. STEDMAN
Chairman of the Special Service Section

T. D. FULFORD
Chairman of the Merchandising Committee



R. W. HELLER
Chairman, Sales Personnel and Training Committee

of modular standards for kitchens and laundries.

Chairman ELIZABETH WILLIAMS is Home Economics Director of the Monongahela Power Co., which she joined in 1937. A graduate of West Virginia Wesleyan College, she did post-graduate study there and at the University of Pittsburgh. She has been on the Home Service Committee for four years and is also active in the Electrical Women's Round Table, National Business and Professional Women's Club, and is an associate member of the Illuminating Engineering Society.

Residential Lighting Committee

The Residential Lighting Committee, with D. E. BOOTES, The Dayton Power and Light Co., as Chairman, will work on the electric utility phase of bulb and portable lamp promotions.

In addition, the committee will take part in the development of an appropriate program to commemorate Light's Diamond Jubilee in 1954 and will also further promotion of the planned lighting program through the use of existing promotional material.

Chairman DONALD E. BOOTES, Director of the Home Service Department, The Dayton Power and Light Co., is a native of Dayton and graduated from the University of Dayton in 1940. He began his career in DP&L's customer contact department in 1941 and was named to his present position in 1950, during which year his department won the Institute's Residential Lighting Award. A member of the Residential Lighting Committee of The Ohio Electric Utility Institute, he is also a past member of the Board of Directors of the Dayton Junior Chamber of Commerce.

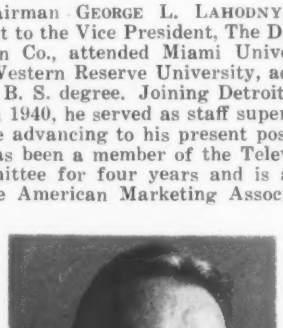
Television Committee

The Television Committee, under the chairmanship of GEORGE L. LAHODNY, The Detroit Edison Co., will continue to publish the informative *TV-News Letter* three times during the coming year.

A special study is being made which, it is hoped, will conclusively show the load-building value of television and which will attempt to measure the effect that TV sales have on dealer sales of other major load-building appliances.

The committee is exploring the possibility of developing a program to sell the idea of a second television set in the home, and will work with RTMA to determine the feasibility of such a project. Minor revisions will also be made in the popular *Tee-Vee Comic Book*, which will be available for use before the end of the year.

Chairman GEORGE L. LAHODNY, Assistant to the Vice President, The Detroit Edison Co., attended Miami University and Western Reserve University, acquiring a B. S. degree. Joining Detroit Edison in 1940, he served as staff supervisor before advancing to his present position. He has been a member of the Television Committee for four years and is active in the American Marketing Association and the American Association of Public Opinion Research.



W. R. MILBY
Chairman of the Wiring and Specifications Committee

SPECIAL SERVICE SECTION

The newly organized Special Service Section, under the chairmanship of J. M. STEDMAN, Pennsylvania Power & Light Co., includes the Wiring and Specifications Committee and the Sales Personnel and Training Committee, both of which had previously not been assigned to a section, and the Merchandising Committee, formerly part of the Residential Section. Through creation of the new section, it is felt that the sales materials, published reports, information, and sales and technical data developed by these committees will be better coordinated.

Upon graduation from University of Michigan, Chairman J. M. STEDMAN, General Sales Manager, Pennsylvania Power & Light Co., served in managerial positions with the Burroughs Adding Machine Co. and the Westinghouse Electric Corp. until 1932, when he joined PP&L as sales promotion manager. Appointed residential sales manager in 1937, he was named to his present position in 1946. Author of many articles for trade and business magazines and co-author in 1951 of the book *Sixty Great Sales Stories by Sixty Great Salesmen*, he is active in professional societies and civic organizations and is past chairman of several committees of the Institute and the Better Light Better Sight Bureau.

Merchandising Committee

The Merchandising Committee, under the chairmanship of T. D. FULFORD, Virginia Electric and Power Co., will continue making studies of sales methods employed in each field of electric utility selling endeavor.

As in the past, the committee will also invite leading sales executives of

principal manufacturing companies to discuss inter-industry cooperation for the purpose of securing greater benefits for consumers and the trade. The value of the reports coming from these inter-industry discussions was evidenced last year.

Upon graduation from the University of Cincinnati as an electrical engineer, Chairman TOM D. FULFORD, General Sales Manager, Virginia Electric and Power Co., joined the Puget Sound Power and Light Co. in 1919, starting in the meter department and, in 1920, transferring to sales. He gained further sales experience with utilities in Savanah, Ga., and Baton Rouge, La., from 1923 to 1926, and during the latter year joined Vepco as division sales manager at Norfolk. He returned to Puget Power and Light in 1933 as general sales manager, rejoining Vepco in 1937 in the same capacity. Active in community affairs, Mr. Fulford is a member of the Rotary Club and of state and local Chambers of Commerce.

Sales Personnel and Training Committee

With R. W. HELLER, Duquesne Light Co., as Chairman, the Sales Personnel and Training Committee proposes to promote wider use of the excellent sales training materials produced by the committee during the past several years. As a service to other committees in the Commercial Division, the Sales Personnel and Training Committee will also produce, in cooperation with these committees, additional training materials for which a need has been indicated.

A graduate of the University of Maryland with Bachelor of Science and Electrical Engineering degrees, Chairman R. W. HELLER, Manager of Residential Sales, Duquesne Light Co., began his career in 1922 with the Westinghouse Electric Corp. in Pittsburgh. In 1924 he entered the employ of Duquesne Light as a power sales engineer and has since served as supervisor of industrial sales and a director of industrial sales, rising to his present position in 1950. He is a member of the Pennsylvania Electric Association, Engineers Society of Western Pennsylvania, Electric League of Western Pennsylvania, and Pittsburgh and Oakmont Chambers of Commerce.

Wiring and Specifications Committee

The Wiring and Specifications Committee, under the chairmanship of W. R. MILBY, The Detroit Edison Co., will prepare a new manual on electric water heater installation, including wiring and plumbing diagrams to cover all possible types of installations. An installation manual for room coolers and automatic fans will also be started and, it is hoped, will be completed during the Institute year. In addition, a commercial re-wiring manual, for use by building managers, contractors, etc., is proposed to augment a manual on new commercial wiring and a standards manual being produced by other groups.

Other important studies that are brought to the committee's attention will continue to be given full consideration and will be prepared and published as definite need indicates.

A native of Cleveland, Ohio, Chairman WILLIAM R. MILBY, Assistant Superintendent in the Customer Service Division, The Detroit Edison Co., graduated from the University of Detroit in electrical engineering. He became associated with Detroit Edison as a meter installer in 1926 and advanced to wiring installation inspector in 1934 and engineer on special assignments in 1936. After 42 month's service in the U. S. Navy, he rejoined the company in 1947 as assistant to the superintendent of the customer service division, rising to his present post in 1951. He is a member of the NAWB Plan Committee, Engineering Society of Detroit, AIEE Committee on Domestic and Commercial Applications, and Western Section of IAEI.

We Are Pioneers

(*Continued from page* 374)

electric company operation, so that the maximum effect of each specialized gain is felt in the progress of the whole organization. There must be *belief* throughout our company organizations that every action taken, no matter how seemingly insignificant, has a direct impact on the future of the company, of the industry, of the American way.

This takes leadership of the most inspiring and understanding kind, like that of those leaders who, in the early days of our country's history, caught the imagination and devotion of people of every degree and condition and led them successfully into the huge unknown that was to become America.

A leader in a free-enterprise atmosphere—whether he wears buckskins or a business suit—besides exhibiting such qualities as alertness, courage, initiative, must know where he is going and why, and must be able to explain these things to his followers. If he cannot, he will not last long as a leader, because his followers are under no compulsion, except their own, to continue with him.

This brings us to a most important contrast. Free-enterprise leadership has always had to demonstrate its capability to carry out desirable aims before successfully enlisting the support of the people. On the other hand, political leadership, once in office, has the impersonal force of government behind its decisions, whether they are right or wrong. The stronger the hold of government over groups and individuals, the less necessity is there for the dominant political leader to consider the best interest of his countrymen.

We have already seen the disastrous application of this truth in too many nations of the world. Leadership of the kind Americans have thrived upon does not exist in the bureaucratic levels of the monolithic state.

The type of leadership which distinguishes pioneers must have the bracing air of freedom. We of the electric companies, in the van of the movement toward the future and bearing the brunt of hostile attacks, know, perhaps better than most people, the full importance of this dependence. We must continue to work diligently to develop the leadership potential which will be required by the coming pioneers and to do our best to insure that Americans will continue to progress in the stimulating atmosphere of freedom and not be doomed to wander helplessly in the choking mists of socialism.

Thank You . . .

PROBABLY few companies ever receive a letter from a customer for 50 years of good service. Central Illinois Light Co. did, however, when Mrs. Charles Tibbs, a retired nurse of Bartonville, Ill., whose service dates back to 1903, expressed her appreciation to the company in an unsolicited letter, as follows:

"Thank you for the friendly service I have enjoyed nigh on to 50 years and wishing you and all of the loyal workers many blessings of health, happy homes and God's kindest blessings along the pathway of life serving God, our country, and humanity."

Review and Classification of 141 Fatal Accidents Reported During 1950
Within the Electric Light and Power Industry
Edison Electric Institute Accident Prevention Committee

(This summary was compiled from detailed reports submitted to the Institute.)

		CONTACTS ESTABLISHED WHILE CLIMBING OR IN WORKING POSITION BUT WITHOUT CUTTING OUT OR LOSING BALANCE		110 -230	Lineman	1.Replacing wire with larger size. Made contact with live sec. wire.
				1200	Lineman	2.Making pri. voltage change. Cut spur line neutral from line neutral in error.
				2300	Lineman	3.Pulling dead wire. Coffing hoist spun, wire moved, hoist handle touched live wire.
				2300	Troubleman	4.Inspecting capacitor control installation. Contacted pri. leads to capacitor.
				2400-4000	App'ce Splicer	5.Working aerial cable. Placed self in series bet. transf. and grounded wire.
				2400-4000	Serviceman	6.Transferring service. Shook guy wire to clear it. Guy contacted pri. wire.
				2400-4150	Lineman	7.Installing hose on pri. wire without rubber gloves. Hand contact.
				2400	Lineman	8.Attempted, without gloves, to cut off pigtail from dead end makeup.
				4000	Lineman	9.Repairing street lamp. Touched mast arm, alive from bushing breakdown.
			HANDS	4800	Lineman	10.Removed rubber gloves after sagging wire. Touched connectors bare handed.
				5000	Lineman	11.Stringing wire. Another employee closed substa. sw., energizing line.
			25	5000	Lineman	12.Same as 11, double fatality.
			CASES	4600-8000	Subforeman	13.Transferring wires. Employee reached, contacted live wire on insulator.
				6900	Troubleman	14.Resetting trip on CSP transf. Touched live lead from transf. bushing.
				6900	Lineman	15.Line had been energized without authority. Lineman touched live pri.
				6900	App'ce Lineman	16.Replacing pole. Removing coffing hoist chain. It flipped into 11 kv line.
				6900	Lineman	17.Preparing to connect transf. neutral. Grasped pri. wire in error.
				6900	Serviceman	18.Climbed into primary area. Ignored warning, touched pri. with hand.
				7200	Lineman	19.Warned that line was to be energized, yet reached to cut mousing wire.
				7200	Lineman	20.Replacing transf. Removed protectors to reduce leakage. Rubber glove failed.
				7200	Serviceman	21.Replacing sec's. Opened 1 cutout, touched wire, but it was alive from open wye.
				7200	Lineman	22.Trying to get jumper to "reach" with hot line stick. Finally used hand.
	LINE			7200	Local Sup'v'r.	23.Disconnecting faulty arrester. Pulled cutout but arr. was on the live side.
	WORK			7600	Lineman	24.Installing jumper to air break switch. Tail of jumper touched live wire.
	ON			7600	Lineman	25.Running 3rd phase. Wire energized momentarily by contact with live phase.
	POLES			115 -230	Lineman	26.Cutting services. Arm contacted sec. while leg was against grounded rack.
				120 -240	Lineman	27.Transferring service. Employee got across 240 volt in unknown manner.
				2300	Serv'n.-Lineman	28.Tying in 2300 V pri. wire. Contact to rt. arm above rubber glove.
	59			2400	Serviceman	29.Running service. Touched pri. with arm while dead ending service wire.
				2400	Lineman	30.Dead ending pri. wire. Made contact to elbow above 18" rubber glove.
	CASES		ARMS	2400	Lineman	31.Reinsulating circuit. Tying in pri. wire. Contact above rubber glove.
				4000	Lineman	32.Extending pri. and sec. Making figure 8 wrap around ins. Arm contact.
			14	4000	Lineman	33.Removed bottom end of jumper. Removing top end, bottom end struck arm.
			CASES	4000	Lineman	34.Pulling slack in pri. circuit. In some manner made arm contact.
				2300-4000	Lineman	35.Reached to relocate line hose on pri. Arm contacted come-along above glove.
				2300-4160	Lineman	36.Extending pri. Reached to place come-along grip on wire. Contacted live pri.
				2400-4160	Lineman	37.Removing temp. jumper. Wrench slipped, left arm contacted live pri.
				2400-4160	Lineman	38.Climbing past pri. wire supposed dead. Wire energized by outside contractor.
				2774-4800	Lineman	39.Applying hose to pri. wire. Contacted live dead end clamp with rt. elbow.
				2300	Lineman	40.On trouble call. Shock. Observed by motorist hanging in strap on pole.
			HEAD	2300	Lineman	41.Adding 3rd pri. wire. Making up jumper, head touched pri. dead end device.
				2400	Lineman	42.On pole. Top of live broken arrester dropped, contacting employee's head.
			7	2300	App'ce Lineman	43.Dead ending arc wire. It was alive. Wrapped around pri. 3 spans away.
			CASES	7200-12,470	Lineman	44.While climbing pole, head struck jumper between cutout and transf.
ELECTRIC				14,000	Foreman	45.Transf. bank about to be energized. Climbed on arm, contacted riser to arrester.
				[illegible]	[illegible]	46.Straightening pole damaged by car. Pri. conductor broke, struck lineman's body.
OR			5	2400-4160	Lineman	49.Installing cutouts in pri. line. While unfastening safety, contacted pri.
			CASES	6900	Serviceman	50.Restoring service. Removed lid of transf. Lid contacted open cutout.
BURN				7200	Lineman	51.Reading counter on recloser. Moving on pole, contacted live open cutout.
			LEG	2300	Lineman	52.Making live tap. Holding tap, reached for pliers. Thigh contacted end of tap wire.

			2400	Lineman	42.On pole. Top of live broken arrester dropped, contacting employee's head.
		7	2300	App'ce Lineman	43.Dead ending arc wire. It was alive. Wrapped around pri. 3 spans away.
		CASES	7200-12,470	Lineman	44.While climbing pole, head struck jumper between cutout and transf.
ELECTRIC			14,000	Foreman	45.Transf. bank about to be energized. Climbed on arm contacted riser to arrester.
					46.Straightening pole damaged by car. Pri. conductor broke, struck lineman's body.
OR		5	2400-4160	Lineman	49.Installing cutouts in pri. line. While unfastening safety, contacted pri.
		CASES	6900	Serviceman	50.Restoring service. Removed lid of transf. Lid contacted open cutout.
BURN			7200	Lineman	51.Reading counter on recloser. Moving on pole, contacted live open cutout.
		LEG	2300	Lineman	52.Making live tap. Holding tap, reached for pliers. Thigh contacted end of tap wire.
			7200	Lineman	53.Boring hole in pole. Leaned ag. neutral to transf. It broke. Circuit thru body.
102		FOOT	2300	Lineman	54.St.lt. fixture alive from duplex wire breakdown. Foot touched st.lt. fixture.
CASES		CONTACT	115 -230	App'ce Lineman	55.Replacing transf. Had completed connections. Touched sec. wire on rack. Fell.
		NOT	Lightning	Lineman	56.Climbing pole. Lightning in vicinity knocked out entire crew. Man fell from pole.
		STATED			
		CUTOUT OR	2300	Lineman	57.Removing crossarm. Attempted to throw it to ground. Lost balance, fell into pri.
72.3%		LOSS	7200-12,000	App'ce Lineman	58.Tightening hardware. Hook cut out. Reached for support, grasped live pri.
		OF BALANCE	7200	Troubleman	59.Changing transf. taps. Shifted position, cut out and fell into 7.2 kv line.
	LINE WORK	FROM LADDER	2100	Troubleman	60.Removing contactor cover of st.lt.transf. Touched metal on ladder ag. live arc wire.
	CABLE WORK	UNDERGROUND	2300-4000	Cable Splicer	61.Preparing to make bond in vault. For reasons unknown contacted live transf. bushing.
			2400-4160	Cable Splicer	62.Opened disconnects in junction box in manhole under load. Burned by arc.
	LINE	NEUTRAL WIRE	2200-4000	Lineman's Helper	63.On ground holding neutral wire to be pulled in. It sagged, contacting pri. wire.
	WORK	FALLEN WIRE	2400-4160	Serviceman	64.Investigating fallen wire using flashlight. Walked or fell into the wire.
	ON THE	SEC. WIRE	4000	Groundman	65.Pulling sec. wire over crossarm. It snagged on splice, jumped, struck cutout.
	GROUND	TEL. WIRE	11,940	Foreman	66.Splicing company tel. wire on ground. It contacted slack 11.9 kv line.
		ENERG'D GUY	7200-12,000	Foreman	67.Setting new pole, guy wire attached. Guy touched 12 kv, end of guy in water.
	9	ENERG'D GUY	7200-12,000	Groundman	68.Same as 67. Wet ground around guy wire became charged.
	CASES	ENERG'D GUY	7200-12,000	Lineman	69.Same as 67.
		ENERG'D GUY	7200-12,000	Truck Dr. Helper	70.Same as 67. Cases 67 to 70 quadruple fatality.
		" TRUCK	Not Stated	Groundman	71.Grasped winch line to hook to pole being set. Truck boom contacted overhead line.
			12,000	Lineman	72.Contacted floating neutral of transf. bank. Two fuses to bank had blown.
		ENERGIZED	7200-12,470	Lineman	73.Reinsulating structure. Reached, placed hand on energized bus.
		BUSES	13,800	Electrician	74.Erecting steel for new bay next to live bay. Received shock in unknown manner.
			13,800	Painter	75.Painting de-energized 115 kv structure. Contacted live 13.2 kv bus assumed dead.
		8	33,000	El.Mt'ce Man	76.Replacing damaged equipment. Climbed back into live part of station.
		CASES	33,000	El. Mechanic	77.Repairing bus tie switch. Reached and tool in hand touched bus.
			44,000	Electrician	78.Went on structure in advance of clearance time to take measurements.
			Not Stated	Lineman-Serviceman	79.Moved from dead to live bay. Attempted to remove nut from live bus.
		LEADS,RISERS	2300	Foreman	80.Removing wiring. Pushed Lee pin thru wall. It contacted bare wire outside.
		AND CABLES	4800	Substation Operator	81.Live bus jumpers hanging clear. Placing ladder, jumpers touched. Flash.
			12,000	Foreman	82.Demonstrating thermite welder. Burned transf. ground wire in two.
	AT	5	13,800	Foreman	83.Checking voltage. Failed to open 3rd phase of circuit. Grasped live lead.
	STATIONS	CASES	33,000	Serviceman	84.Checking load. Placed split core ammeter on 33 kv lead instead of 12 kv. Flash.
	ON OR	DISC.	2300	Maint. Helper	85.Making connections to main bus. Touched disc. sw. alive from aux. bus.
	AROUND	SWITCHES	8320	El. Mechanic	86.Connecting voltage regulator. Contacted adjacent live disc. sw. blade.
	EQUIPMENT	3 CASES	33,000	El. Maint. Man	87.Wiping bus supports. Believed cloth bridged open disc. sw. to live side.
	BUS	LIGHTNING	13,800	Foreman	88.Repairing insulator damage. Contacted connection to lightning arrester.
	STRUCTURES	ARRESTERS	33,000	Lineman	89.Climbing structure to replace damaged bus support. Contacted arrester.
	ETC.	3 CASES	40,000	Assistant Foreman	90.Reconnecting sta. for 69 kv operation. Climbed, contacted lightning arrester.
		REACTORS	12,000	Electrician	91.Inspecting compartments. Took door off live compartment. Lost balance, fell.
	31	2 CASES	Not Stated	Mechanic	92.Working in cubicle taping conductors. Apparently contacted a reactor.
	CASES	CURRENT			
		TRANSF.	Not Stated	Not Stated	93.Raising transf. with coffing hoist. Hoist twisted, chain struck curr. transf.
		POTHEAD	4000	Not Stated	94.Adding oil to transf. in vault. Contacted live pothead believed to be dead.
		DEAD END			
		CLAMP	4160	Foreman	95.On roof of station. While point.to dead end clamp, made contact.
		COUPLING			
		CAPACITOR	69,000	Engineer	96.Helping to install carrier current coupling capacitor. Arced to his body.
		SPECIFIC	440	Lorry Man	97.Climbed and attempted to pry open door of coal bunker. Contacted circuit.
		PART OR	4000	Mechanic	98.Switch gear smoking back of board. Went to pull sw. with breaker closed. Arc.
		EQUIPMENT	13,000	Substation Operator	99.Blocking circuits for construction forces. Entered a live compartment.
		CONTACTED	13,000	Substation Operator	100.Same as 99 double fatality.
		NOT	23,000	El. Mechanic	101.Installing 8 ft. tap from 4 kv line to disc. Loose end of wire touched 23 kv.
		STATED	33,000	Wireman	102.Installing equipment in dead bay. Apparently fell into live bay.

Review and Classification of 141 Fatal Accidents Reported During 1950
Within the Electric Light and Power Industry
Edison Electric Institute Accident Prevention Committee

(Continued)

FALLS	LINE WORK ON POLES OR TOWERS	FALL FROM POLE OR TOWER 4 CASES	Lineman	103.Climbing pole to replace crossarm. Fell 13 ft. Cause of fall unknown.
			Lineman	104.Climbing pole. Nearby rusted trolley pole fell, may have struck him.
			Lineman	105.While descending pole his spur cut out and he fell to ground.
			Towerman	106.Pulling conductor to tension. Crossarm on tower collapsed. Fell.
13	7	FALL WITH POLE	Lineman	107.Stripping pole of transf. and wires. Cut service wires and pole fell.
			Lineman	108.Dismantling service pole unsupported by guys or sec. wires. It fell.
CASES	CASES	3 CASES	Serviceman	109.Working on pole when it broke off at the ground line and fell.
	LINE WORK	BROKEN LADDER	Lineman	110.Working on extension ladder when it broke. Cause undetermined.
		FALL INTO CANYON	App'ce Lineman	111.Sent to untie hand line from pole near canyon. Found dead in canyon.
	3 CASES	UNLOADING POLES	Foreman	112.One end of pole on ground, other end on car. Pole shifted, he fell beneath it.
9.2%	AT STATIONS	SUBSTATION GIRDER	App'ce Wireman	113.Walking along 3 ft.6 in. wide girder, carrying ladder. Fell to ground.
		FALL FROM AIR HOIST	Carpenter	114.Riding air hoist down from catwalk. Air hoist stopped suddenly. Fell.
	3 CASES	FALL FROM DAM	Mechanic	115.Placing flashboards. Safety belt supplied but not used. Fell from dam.
MOTOR VEHICLES	ON HIGHWAY	INTERSECTION COLLISION	Estimator	116.At intersection of county roads, company car struck by another car.
		INTERSECTION COLLISION	Engineer	117.At intersection, panel truck disregarded stop sign, struck company car.
		COLLISIONS ON HIGHWAY	Vice President	118.Car left road. Attempting to get back on road, got in path of approaching car.
9	8	COLLISIONS ON HIGHWAY	Sen. Clerk	119.Driver of oncoming car fell asleep, car crossed road and struck company car.
		COLLISIONS ON HIGHWAY	Home Economist	120.A car attempted to pass a truck and collided with the company car.
CASES	CASES	COLLISIONS ON HIGHWAY	Home Economist	121.Same as 120, double fatality, driver and passenger.
		CAR LEFT HIGHWAY	Salesman	122.Driving on icy highway. Car left the road and overturned.
6.4%		CAR LEFT HIGHWAY	Investigator	123.While driving company vehicle, car skidded and struck pole.
	IN FIELD	TRACTOR	Truck Operator	124.Operating crawler type tractor on slope. It overturned, pinning him beneath.
STRUCK BY		CABLE REEL	Helper	125.Transferring cable reel, one truck to another. It fell, pinning him.
4 CASES	LINE	CRANE BOOM	Assistant Sup't	126.Inspecting boom weakened by use in tower erection. Boom fell on him.
	WORK	TRUCK BOOM	Helper	127.Pole setting boom fell from near vertical position striking man.
2.8%		R.R. LOCOMOTIVE	Foreman	128.Driving pipe under RR tracks. Struck by RR locomotive.
BURNED	PLANT	PULVERIZED FUEL	Mechanic	129.Removing section of pulverized coal pipe. Pulverized fuel ignited.
4 CASES		PULVERIZED FUEL	Mechanic	130.Same as 129, double fatality.
	LINE	KEROSENE	Laborer	131.Pouring kerosene to burn brush. Kerosene on clothing ignited.
2.8%	CABLE	GAS MIXTURE	Splicer	132.Testing conductors of relay cable in manhole. Gas in manhole ignited.
DROWNED		FALL INTO WATER	Laborer	133.Last seen walking wing wall. Body later found in condenser discharge.
5		FALL INTO WATER	Jr. Operator	134.Replacing lamps on standards. Lamp standard broke, fell into spillway.
CASES	PLANT	FALL INTO WATER	Laborer	135.Chopping limbs from log lodged against flashboards. Fell into water.
		FALL INTO WATER	Patrolman	136.Canal patrolman fell into canal while on patrol duty.
3.5%		SKIFF SANK	Laborer	137.Repairing dam. Strong current carried skiff over sluiceway.
	LINE	HEAT STROKE	Lineman	138.Had performed no strenuous work. Belted in at top of pole when stricken.
MISC.		HEART CONDITION	Lineman	139.Workman died of heart failure while working on pole.
4 CASES	PLANT	HERNIA	Electrician	140.Lowering meter cabinet and transf. Hernia. After operation died from embolism.
		HEART CONDITION	Boiler Operator	141.After performing normal duties of work on boilers suffered coronary occlusion.

Compiled for EEI Accident Prevention Committee
by D. C. Stewart

Fatal Accidents in the Electric Light and Power Industry

Analysis of Fatalities in 1950 Concludes Accident Prevention Work of D. C. Stewart

ON April 5, 1952, D. C. Stewart, member and past chairman of the Accident Prevention Committee, passed away at Buffalo, N. Y. Mr. Stewart had worked untiringly in the interest of safety in the electric light and power industry and at the time of his death was System Safety Supervisor of the Niagara Mohawk Power Corp.

Perhaps Mr. Stewart's greatest contribution to the work of the Accident Prevention Committee was his annual summary of fatal accidents in the industry. For the past ten years, data concerning each accidental death reported to the committee have been gathered and classified by Mr. Stewart according to cause and contributing factors. The summary of the 141 fatal accidents reported during 1950, which appears on the three preceding pages, had just been completed before his untimely death.

The annual statistical reports submitted to the Edison Electric Institute for 1950 indicate an encouraging decrease in accidental deaths over the 176 fatalities reported for the year 1949. The one hundred and forty-one fatal accidents of 1950 represent a death rate improvement of 19.9 per cent over the previous year and give 1950 the lowest number of deaths by a slight margin since 1946. The substantial decrease of 20 per cent experienced in 1950 over the previous year is tempered by the fact that 1949 marked an all-time high for fatalities reported to the Institute. As indicated in Table I, 1950's total figure continues a death trend since 1946 that averages 45.4 per cent higher than that of the preceding six years.

TABLE I—TEN YEARS OF FATAL ACCIDENTS IN THE ELECTRIC LIGHT AND POWER INDUSTRY, 1941 TO 1950, INCLUSIVE
(From EEI Accident Prevention Committee Summaries)

Year	*Total*	*El. Shock or Burn*	*Falls*	*Motor Vehicles*	*Struck By*	*Burned*	*Caught In*	*Drowned*	*Misc.*
1941	121	90	11	8	4	2	3	1	2
1942	121	81	19	11	6	3	0	0	1
1943	117	81	14	3	7	5	1	3	3
1944	82	62	6	5	6	1	2	0	0
1945	116	79	14	6	5	4	3	3	2
1946	105	68	19	8	5	0	2	2	1
1947	173	125	20	8	13	3	2	1	1
1948	149	102	21	13	6	2	2	0	3
1949	176	134	16	13	6	1	5	1	0
1950	141	102	13	9	4	4	0	5	4
10-Year Total	**1301**	**924**	**153**	**84**	**62**	**25**	**20**	**16**	**17**

PP&L Commemorates Registration of 75,000th Share Owner

TO commemorate the registration of the company's 75,000th share owner, Pennsylvania Power & Light Co. recently conducted a three-day tour of its service area and major installations for Mr. and Mrs. Paul O. Pfeiffer of Columbia, Pa., whose joint purchase of stock established a new PP&L ownership record.

The tour began in Allentown, Pa., where the Pfeiffers met PP&L President Charles E. Oakes, members of the board of directors, and other company officials, at a luncheon held in PP&L's executive offices. The dining room was decorated with a welcome banner and the tables set with souvenir place mats, Reddy Kilowatt napkins, and souvenir menus. Following the luncheon, which was prepared by the company's home service organization, Mr. Oakes spoke briefly on the importance of the small investor to American industry and presented a commemorative scroll to the Pfeiffers. The tour then continued with a visit to the company's Siegfried substation.

On the second day, the Pfeiffers inspected PP&L's new Martins Creek power-plant site along the Delaware River and the company's service depot at Hazleton, Pa., and on the following morning visited the Sunbury power plant. That evening the trip was concluded with a "PP&L family dinner" in Lancaster, Pa., which was attended by local business leaders, including E. T. Gable, owner of the Gable Buick Agency, where Mr. Pfeiffer is employed as service manager. During the course of the evening, G. T. Storb, Vice President of PP&L's Lancaster Division, presented the Pfeiffers with an electric range and clothes washer.

Writers and photographers accompanied the Pfeiffers on the trip in order to provide news releases and pictures for the local press enroute. The company also inserted two advertisements on the 75,000th shareholder in service-area newspapers.

The Credit Picture

Results of Survey Conducted under Joint Supervision of the Credit and Collection Committees, EEI Accounting Division and AGA Accounting Section

SEVERAL items in the latest Credit Picture indicate that collection conditions throughout the country were less favorable during the first six months of 1952 than they were in the same period of 1951. This is reflected most noticeably in the increased charge offs, both in number of accounts and in dollar volume. A study of the table below indicates that:

1. The increase in the number of accounts charged off is considerably in excess of the percentage increase in the number of customers for all geographical areas.

2. In all areas, except the Mountain States, the percentage increase in dollar volume of charge offs is greater than the growth in total sales.

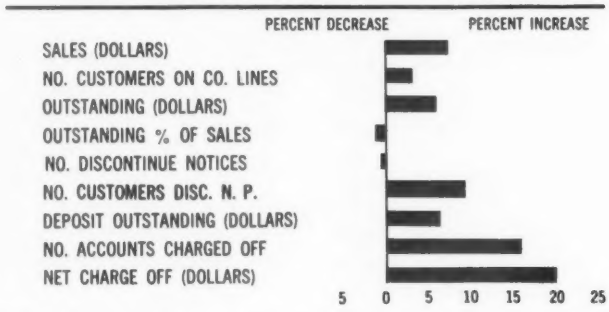
A further study of the individual reports shows that 80 per cent of the utilities covered by the survey reported increases in net charge offs greater percentage-wise than the increase in dollar sales volume.

Services disconnected for non-payment are usually a good indicator of changing local collection conditions. An increase in such disconnections was reported for the country as a whole and for all geographical areas except New England and West North Central. A closer study of the New England area shows that five utilities reported an increase in non-payment service disconnections. These were offset, however, by two larger utilities which reported decreases.

As collection conditions become poorer, there is a tendency for utilities to require more cash deposits.

CREDIT AND COLLECTION EXPERIENCE OF U. S. GAS AND ELECTRIC INDUSTRIES

JANUARY 1, 1952-JUNE 30, 1952, COMPARED WITH SAME PERIOD FOR 1951



Some significance, therefore, may be attached to the fact that seven of the nine geographical areas reported an increase in deposits, six of which were greater proportionately than the increase in the number of customers.

All geographical areas experienced increases in total sales. The percentage of increase in each area, however, was smaller than in 1951. For the first six months of 1951 the increase over 1950, for the country as a whole, was 12 per cent; for the first six months of 1952 the increase over 1951 was 7.5 per cent.

The trend shown by the Credit Picture definitely indicates less favorable credit and collection conditions than a year ago. There is reason for feeling that the situation, though not serious, is disturbing. It is still true that the loss experience of the industry is low. However, in the face of a tapering off in sales increases, greater numbers of customers denied service for non-payment, and substantial increases in the dollars of net charge off, collection men need to examine carefully the basic causes of these trends and adjust collection practices where practicable to meet the situation. Despite the high level of business conditions currently experienced throughout the nation, there is growing proof that individual company losses are being materially influenced, and the country's totals in turn, by the swelling tide of shifting transient-like population movements from area to area causing losses disproportionate to normal expectancy. This problem merits careful study.

Available statistics would indicate that the ratio of net losses to sales nationwide has remained steady to higher for the past two years but is perhaps one-third above the ratio of 1948. It is very likely that this adverse trend has been duplicated at a number of local levels.

Many and diverse factors influence collections, some of which are very difficult to control. The function of the Credit Picture is to highlight the trouble spots, if any, for the benefit of the industry.

REFLECTION OF THE CREDIT AND COLLECTION EXPERIENCE OF UNITED STATES ELECTRIC AND GAS UTILITIES—JANUARY 1, 1952, TO JUNE 30, 1952
Per Cent—Increase or Decrease over Corresponding Period—1950

	New England	*Mid-Atlantic*	*East North Central*	*West North Central*	*South Atlantic*	*East South Central*	*West South Central*	*Mountain States*	*Pacific States*	*United States Total*
Sales (Dollars)	+ 7.0	+ 4.6	+ 6.6	+ 9.6	+ 8.7	+ 7.9	+ 8.1	+11.2	+10.5	+ 7.5
No. Customers on Co. Lines	+ 1.8	+ 1.6	+ 3.3	+ 3.1	+ 5.6	+ 5.8	+ 3.4	+ 4.9	+ 4.9	+ 3.5
Outstanding (Dollars)	+10.1	- 0.6	+ 3.7	+13.3	+14.7	+ 5.0	+11.6	+ 8.3	+ 6.3	+ 6.1
Outstanding % of Sales	+ 2.9	- 5.0	- 2.7	+ 3.3	+ 5.5	- 2.7	+ 3.1	- 2.6	- 3.8	- 1.3
No. Discontinue Notices	-17.9	+ 8.8	- 5.6	- 8.2	+10.4	+ 3.3	- 9.2	+11.6	- 7.1	- 0.7
No. Meters Disc. N. P.	- 1.3	+11.8	+ 1.6	- 0.6	+22.0	+ 3.7	+21.5	+18.4	+12.6	+ 9.5
Desposit Outstanding (Dollars)	+ 2.8	+10.0	- 0.3	+ 0.7	+10.4	+ 7.7	+ 4.9	+ 6.2	- 4.9	+ 6.8
No. Accounts Charged Off	+ 3.8	+13.0	+ 8.0	+16.7	+31.9	+15.2	+17.8	+23.7	+17.6	+16.3
Net Charge Off (Dollars)	+34.2	+ 6.0	+20.2	+15.5	+23.5	+28.8	+27.4	+ 6.4	+31.1	+20.0

What Are the Power Needs and Resources of New England?

Albert A. Cree
President, Central Vermont Public Service Corporation

An address before the Curriculum Laboratory in Economic Education, University of Connecticut, Storrs, Conn., August 16, 1952

"MEASURED in terms of per capita income and its standard of living, New England is one of the more prosperous areas of the country. It is, moreover, a highly industrialized region. It is a region which has many assets. Its climate and geography contribute to the energy and initiative required by modern industry. The region has a population with a high level of education and skill; it has a social and political climate which is generally recognized as favorable to the development of industry. Its people are noted for their independence and self-reliance. They seem to look less to the Federal Government for help than do the people of any other region. New England is an area in which many people like to live because of its proximity to the shore, because of its climate, and because of its general social and cultural environment."

What I have just quoted is the opening paragraph of the report on The New England Economy made in June, 1951, to the President of the United States by the Committee on the New England Economy through the Council of Economic Advisers.

This report was the product of a study of the so-called "New England problem," about which so much has been said and printed during the past few years. A large part of the talk and discussion has been Federal government propaganda from Washington slanted to soften us up for invasion by the forces of the Federal public power trust. High officials and agencies of our own national government have falsely portrayed New England to its own people and the rest of the nation as an area of economic decay. Unfortunately, some public men and some men who should be among New England's intellectual leaders have fallen for this line and have hurt New England's cause.

New England is not perfect. It has its faults and its economic disadvantages, just as do other regions of this great nation. However, New England has strength, experience, brains, and enterprise enough to find and to apply New England solutions to New England's problems so that we shall continue, as we have for the past three centuries, to maintain and improve the opportunities for better living for our people and to contribute richly, as we have always done, to the general welfare of the nation.

Development of Power Sources

From the earliest days in New England, the availability of power has been an important factor in the development of the area's economy. The first water power developments were constructed only a few years after the landing of the Pilgrims at Plymouth Rock. From then until about the middle of the nineteenth century, the development of water power provided almost all the power for the region's industry. Then the steam engine began to appear and New England's industry ceased to be tied as closely as before to water power sites.

The close of the nineteenth century saw the beginning of the age of electricity, which brought significant—yes, momentous—changes in the art of production and transmission of power. The basic requirements for the location of industry and the internal arrangement of machines lost their former rigidity. No longer were industries tied to the sites where power could be generated, nor were machine locations limited by the power transmission abilities of the shaft, pulley, belt, and gear.

New England was a pioneer in the use of electricity. Alert and adventurous New England management continues today to pioneer in the search for new and better ways to produce, transmit, and use electricity. The electric motor was invented by a New Englander, Thomas Davenport of Brandon, Vt. The first application of the transmission of electricity using step-up and step-down transformers was made at Great Barrington, Mass., in 1886. In more recent years there have been other pioneering ventures, mostly successful but some still unproven—for instance, the first commercial installation in 1927 of a mercury vapor boiler and turbine at Harford, Conn.; the intriguing experiment in the early 1940's at Rutland, Vt., in the use of wind power for generation of electricity; and now, in both Maine and Vermont, the first pioneering installations of the latest in electricity generating machines, the gas turbine.

The availability at all times of an adequate and reliable supply of electrical energy is an imperative requirement in almost every phase of modern life. Over the years since the beginning of this century the electric power companies of America have developed facilities and systems for the generation and distribution of electricity which in their usefulness to the people and the nation are unrivaled and unmatched anywhere in the world. The power production and distribution facilities of New England are an important part of this great picture.

In 1951, New England utilities had an installed generating capacity of 4,123,000 kw. About 23 per cent of the New England capacity was powered by water power and the balance of 77 per cent by fuel-burning prime movers. Since 1940, generating capacity has been increased just under 40 per cent. Of this total increase, 91 per cent has been in fuel-burning plants, mostly steam, and the balance

of 9 per cent has been in new hydro capacity. Practically all of the increase took place after the war in the six years from 1945 through 1951. During that period, New England utilities spent $565,000,000 in the expansion of generation, transmission, and distribution facilities.

Sales of electricity to ultimate consumers in New England in 1951 totalled 15,234,000,000 kwh. This was better than twice the amount of electricity used in 1940. Revenues from the sale of electricity to 3,159,000 New England customers in 1951 totalled $384,135,000. It is interesting to note that while, during the 11 year period from 1940 through 1951, kilowatthour sales increased by 114 per cent, dollar revenues from those sales went up by only 98 per cent.

Industrial use accounted for 51 per cent of total sales. Domestic use, including both homes and farms, accounted for 29 per cent and commercial—stores, offices, etc.—16 per cent. Rural electrification began earlier and progressed more rapidly in New England than in the rest of the country and is now substantially completed. In all states except Maine, more than 95 per cent of the region's occupied farms are on power lines. In Maine, 90 per cent are so located. In this field, New England is far ahead of many other sections of the nation and, particularly, of the much-advertised public power areas of Tennessee and Nebraska.

No Federal Power

The bulk of New England's electricity supply is provided by investor-owned utilities. There are no Federal public power projects in the region, a fact of which New Englanders are very proud and one which irks public power crusaders of the Federal power trust considerably. There are some municipalities in the power production and distribution business, but the percentage of the whole is very small.

Practically all of the electric generation and transmission systems of the companies serving New England, outside of Maine, are interconnected. By reason of its so-called Fernald law forbidding the export of electricity generated by water power, Maine is virtually isolated electrically from the rest of New England. It does have available for emergency use, however, a connection with the interconnected New England system, through which power may be imported in case of need. This interconnected New England system is also interconnected with the transmission systems of New York to the west. As the Federal Power Commission stated in its recent report on a Power Market Survey of the area, "all these interconnections facilitate a high degree of coordination of the operations of the various utilities of the survey area and economical utilization of their hydro-electric and steam-electric generating resources." All of this adds up to the realization of the fact that New England has and has had facilities of unrivalled excellence with which to meet its constantly growing electric power supply needs.

Rate Differentials

The cost of the electric power supply for New England industry has been a fruitful subject of public discussion in recent years. The charge has been made that high power rates for industry have resulted in industries leaving New England for areas, such as the TVA country in the South, where power rates are lower. High rates have also been held responsible for keeping new industry out. Neither charge is justified by the facts, and the facts should be examined.

In the June, 1950, monthly bulletin of the Federal Reserve Bank of Boston it was stated that the average cost per kilowatthour of electricity consumed by New England manufacturers was 61 per cent higher than the average paid by all manufacturers in the United States. Now, while that statement may have been arithmetically true, it has no practical significance in connection with any manufacturer's decision as to where to locate his business. It is the rate schedule that matters. Comparative levels of rate schedules may be secured only by comparing bills for the same amount of demand (capacity required) and of usage (kilowatthours used), calculated on the rate schedules being compared.

Perhaps this point can best be illustrated by drawing a parallel with the cost of car operation. Two cars of the same make and price and using the same priced gasoline would obviously have a very different average cost per mile if one was operated 5,000 miles in a year and the other 25,000. The difference in the average cost per mile in this case would have no significance to the prospective purchaser of one of the cars. Rate schedules with a demand charge and an energy charge operate similarly and practically all rate schedules for industry are of this form. Usage, of course, depends upon whether a manufacturer is large or small, whether he operates one, two or three shifts, etc. The difference in industrial rate schedules between New England and the United States averaged in 1947 roughly 20 per cent, and on January 1, 1950, it was just under 15 per cent, in contrast to the 61 per cent differential in average per kilowatthour cost which was headlined in the Federal Reserve Bank report.

I have examined and compared the cost of power for industry in six of the larger cities in New England (Providence, R. I., Hartford, Conn., Worcester and Boston, Mass., Portland, Me., and Manchester, N. H.) with such national industrial centers as Trenton, N. J., Detroit, Mich., Akron, Ohio, New York, N. Y., and Pittsburgh, Pa. The comparison was made of monthly bills on January 1, 1951, as reported by the Federal Power Commission, for a demand of 1000 kw and usage of 200,000 kwh.

The comparison showed that a manufacturer, buying power in Detroit, was paying from 5 to 25 per cent more for his power than he would have paid for it in any of the six New England cities. If the Trenton manufacturer were located in the southern New England cities, his power costs would be above those in Trenton by only 1 to 6 per cent, but if he located in either of the northern New England cities he would save money. In Akron, Ohio, the differential ranged from 6 to 11 per cent. In Pittsburgh, it was greater, about 20 to 25 per cent, and in New York, the differential almost disappeared. In all cases, the power costs in the northern New England cities would show savings.

All this adds up to quite a different kind of story than that usually told by the detractors of New England on the subject of industrial power cost.

With the exception of a few large

power-consuming industries, such as the primary aluminum, electrometallurgical, and electrochemical industries, the cost of purchased electric power is such a small proportion of total manufacturing costs that it has no decisive significance at all in the location of industry. There are relatively few places in the country where physical conditions make possible the production of the low-cost power required for the large power-consuming industries mentioned. New England is not one of those places.

In a tabulation prepared from the 1947 Census of Manufactures of 103 industries, in only 14 of them did the cost of purchased power exceed 1 per cent of the product value; in only six did it exceed 2 per cent. This discloses the fallacy of the claim of "cheap power" as an important factor of influence in promoting the development of an area.

At one time several years ago when this argument had waxed rather hot and the claim was repeatedly made that the so-called "cheap power" of the TVA area was luring our industries thither, a business friend of mine wrote TVA and inquired about the truth of the propaganda being booted about. Here is a paragraph from the reply letter of a TVA official:

> This is in reply to your letter asking for a copy of any report on TVA's "success" in having industries moved from other areas, particularly New England, because of low rates for electricity. If we knew of any industries which had moved from New England for this reason, we would seek the $100 reward which we understand the New England Council has offered for spotting such a case! As a matter of fact, we have been unable to find more than a handful of industries which have moved their plants into this area from any other locations, and in those cases the reasons have been other than low power rates.

Then there is the rather recent but classic example, Textron, Inc., operating nylon plants of identical manufacturing capacity in Manchester, N. H., and Williamstown, S. C. Textron's president reported in the press that it cost $363,972 more to produce the same amount of nylon at Manchester than it did at its southern plants, and he listed the items of cost producing this difference between New England and the South. Power accounted for only $4,746 out of the total differential of $363,962, just a little over 1 per cent. Payroll and other labor costs and taxes made up the bulk of the difference.

All this adds up to the fact that it certainly is not the cost of power that will either make or break New England's industrial economy or, in fact, have any significant effect on its development. Nevertheless, we in the electric industry in New England are constantly striving to find means to bring down our cost of producing and distributing electricity, and our past record in that regard is one of great achievement.

It does cost more to produce electricity in New England than in many other parts of the country, much more than in some of them. As a very natural and understandable result, the price at which electricity is sold must be higher by enough to cover the higher costs. This industry, like any other in our free-enterprise system, has no place to go for that purpose except its customers. Public power projects, particularly the Federal ones whose operations are remote from taxpayers' control, would have access to the government's taxing power to recover the difference.

Price and Cost Differences

What is the measure of the difference in price and costs for electricity in New England and the rest of the country and what kind of costs are significantly different, and why?

To get some answers to these proper questions, I analyzed for the year 1950 (the latest available figures) the operations of all of the investor-owned electric companies in New England having operating revenues of $250,000 or more (64 of them) and compared these companies as a group with all such electric utilities in the nation (322 of them).

The study disclosed that, while the New England companies received an average of 3.13 mills per kilowatthour more than the average for the nation for electricity sold, the average net operating revenue per kilowatthour (after payment of expenses and taxes) of the New England companies was exactly the same as that for the nation. So, all of the price difference was to cover cost difference.

Now, what were the cost differences? I divided the operating expenses into those for production, transmission, distribution, customers accounting and collections, sales promotion, and general administrative expenses. Then, there were also depreciation and taxes.

Production costs were 2.72 mills per kilowatthour higher for New England than the national average. This accounted for about 87 per cent of the total difference of 3.13 mills. Another large item of difference was taxes, which were .25 mill per kilowatthour higher in New England than in the nation at large. Transmission, distribution, and sales promotion expenses were lower in New England than the national average and accounting and administrative costs were higher by about .27 mill per kilowatthour.

From this analysis it is obvious that the real problem as far as price is concerned is in the cost of production. Roughly 77 per cent of New England's supply of electricity is produced by fuel-burning plants. My analysis showed that the cost of fuel was 2 mills per kilowatthour generated greater in New England than the national average. The national average fuel costs were 3.5 mills, and New England's were 5.5 mills. Thus, New England's fuel costs were 57 per cent higher than the national average. With other minor differences, therefore, it is the higher cost of fuel in New England that results in the higher production cost for electricity there. This condition is not difficult to understand when we reflect that there is no coal or oil beneath the New England soil and all such fuel has to be imported from relatively remote locations. Transportation costs make up the bulk of the difference in cost of fuel in New England and the nation as a whole.

At this point, perhaps, I should mention the question that is so frequently raised. Wouldn't greater use of water power radically reduce or remove this cost differential? The answer is no. I shall go into this matter a little later, but right here I want it to be known that I am not ignoring it.

Perhaps in closing this particular phase of discussion I should quote

again from the report of the Committee on the New England Economy:

> The Committee believes that power and fuel costs alone are not sufficiently important to impede the development of the region's manufacturing economy, nor are they of sufficient magnitude to lead to appreciable out-migration of existing firms.

Future Power Needs

What about New England's future electric power needs? What are they reasonably expected to be? How can they best be provided, and by whom?

Utility executives and engineers are constantly looking into the future and making and putting into execution plans to take care of estimated future needs. For these planners this is a routine responsibility, but a heavy responsibility, for not only their own business survival but also the continued progress and welfare of the areas they serve depends upon the accuracy of their estimates. The past record of the unfailing adequacy and reliability of New England's electric power supply gives eloquent testimony to the competence and reliability of the managerial and engineering talent of the New England utility systems. Except for very spotted and localized incidents of short duration during unprecedented drought periods, the electric power supply for New England has never been too little or too late.

Future loads on electric systems must be forecasted so accurately that heavy equipment, particularly generation equipment, requiring several years for delivery and installation, will be found adequate to do the job before it when it is installed and ready to operate. The additional facilities must be available when needed but not much before that time.

While detailed planning of equipment is inherently a short-term program, say three to four years ahead, there are certain things needed to provide the additional generation and transmission capacity required to carry the growing loads of the more distant future which must be anticipated through a long-range planning program some years in advance of their needs, such as acquisition of future plant sites, transmission rights of way, future substation sites, and other plans in preparation for future expansion. The electric companies of New England have been doing such forward planning and acting for many years. New steam-plant sites and transmission rights of way have been acquired in locations where such sites may be difficult to obtain in the future. Expansion possibilities at present plant sites have been carefully appraised and are well known. All possible water-power sites are known and have long been studied to fit them into the expansion program when and if their development could be economically done in competition with steam.

The short-range forecast through 1954 shows that the electric generating capacity of New England utilities will have been enlarged from 4,123,000 kw at the end of 1951 to 4,873,000 kw at the end of 1954, an increase of 750,000 kw. Firm orders have been placed with manufacturers for equipment to be delivered and in operation through 1954. Expenditures of all the New England utilities on their expansion program during this period are estimated at $320,000,000. This amount, together with the $565,000,000 spent for expansion purposes in the preceding six years, adds up to almost a billion dollars for the ten-year period.

In planning for the future, experience has shown that, while careful analysis of the past can give a reasonably close indication of the probable load for the immediate future, if forecasts are attempted beyond this, they become more and more indefinite and can more reasonably be shown as a band between the upper and lower limits of which the load is likely to fall. Long-range estimates made in this manner by the New England utilities for the period from 1955 through 1975 indicate that if the trend in load growth through 1975 follows the estimated minimum rate, approximately 4,300,000 kw of additional generating capacity will need to be provided. However, if the trend follows the estimated maximum rate of load growth, then approximately 7,500,000 kw of additional capacity will be required.

A reserve of generating capacity for emergencies, maintenance, unpredictable loads, etc., has been assumed at approximately 15 per cent of peak load. The rate of load growth should be somewhere between the estimated maximum and minimum, but, in any event, there will be ample time to make proper provisions for any changes in trend before final detailed planning of equipment needs to be done. Long-range estimates such as these need to be constantly reviewed with the passage of time. However, this much is known now: at least 7,500,000 kw of additional steam and hydroelectric generating capacity can be installed in presently planned sites, in addition to that planned for installation through 1954. That is the maximum presently envisaged for the 20-year period through 1975.

Hot Discussions

The indications are clear that the bulk of new electric generating capacity to carry future load growth will be powered by fuel-burning prime movers, largely steam. The record for the past 11 years, 1940 through 1951, shows that of the total increase in installed generating capacity in that period, 91 per cent was in fuel-burning plants and only 9 per cent was provided by added hydroelectric capacity.

Because of the great variation and uncertainties in river flows, recent hydro developments in New England have generally proved to be economically justified only for use as peaking power and reserve. This has long been understood by the utilities and is recognized by the Federal Power Commission. Peaking hydro power must be supplemented by steam-electric generating capacity to fill in the longer non-peak hours of operation to supply the around-the-clock demand for electricity.

This question of hydroelectric power versus steam-electric power is one that has generated hot discussions in New England in recent years. The water power problem is one that is very closely tied up with the attempts of the public power crusaders of the Federal government power trust to move into New England with their socialistic valley and regional development schemes and authorities.

Today and ever since the electrical age began New England is, and has been, supplying all of its power

needs without help from the Federal taxpayers' pockets and the bureaucrats of the Federal power trust. New England has done a good job for itself, but now the Federal government is trying to move in. For several years it has been dinning into the ears of our New England folks and others the theme song that we have neglected the development of our water power potential and thus failed to reduce our costs and our rates as we should have done. This is false.

We have not neglected water power development. On the contrary, New England water powers are well developed compared to the rest of the country. New Hampshire has for its area 15 per cent more water power developed than any other state in the nation, 32 kw per square mile against Washington's 27.9 kw. Of the ten states having the greatest development per square mile, four are in New England.

In 1948, the New England Council, a highly respected organization of New England businessmen devoted to advancing the economic development and progress of New England, published a report on power in New England prepared by its Power Survey Committee. The director of the survey was William F. Uhl, President of Charles T. Main, Inc., eminent independent engineers of Boston, with a wealth of practical experience and knowledge in the field of water power development in New England. The council's study found undeveloped water powers of over 2000 kw capacity each which would be economically feasible of development, totalling about 500,000 kw, of which approximately half was in the State of Maine.

Shortly thereafter, the Federal Power Commission announced that it had found over 3,000,000 kw of undeveloped hydro. Discussion of the great discrepancy between these two estimates finally brought the Federal Power Commission to state that their figure was based on preliminary desk studies only and was made up of projects that looked as if they might merit investigation. There was absolutely no knowledge that any such total could be found to be economically feasible of development if honest cost and return yardsticks were applied. In addition, the then chief of power of the commission stated that the hydro possibilities in New England were all peaking power and that, if all of the 3,000,000 kw was found feasible of development, such development would have to be accompanied and supplemented by 9,000,000 kw of steam power to make it usable in the market, a ratio of 3 kw of steam for each 1 kw of hydro.

So, even if all this 3,000,000 kw was found to be good and economically feasible, it could not be used up on that basis until the New England load had increased by at least 12,000,000 kw. Even the Federal Power Commission itself has not said that would happen in the next 20 years. Experience of New England utilities has shown that the ratio of 1 kw of hydro for 3 kw of steam is on the high side.

Thus, the future development of hydro power in New England cannot possibly have any important effect in bringing down electric rates, because the supply of the future load growth must come so largely from additions to fuel-burning capacity. The cost of fuel will remain as the major determinant of electricity production cost in New England as far forward as we can presently see. The prime hope for reduction in production costs will come from equipment that will provide more and more efficient utilization of the energy in the fuel. As such equipment becomes available, it will be used by New England electric companies.

The Committee on the New England Economy shared this view as evidenced by the following extract from its report:

> . . . differences in fuel costs dominate in the explanation of power rate differentials and . . . steam generation will almost inevitably become a steadily larger proportion of total output in New England no matter how much new hydroelectric capacity is developed.

In the event that the proposed St. Lawrence power development is completed and its capacity prorated over the whole region of New York and New England, New England's share would be so small that it could have no significant effect either on the New England supply program or the costs of power. It is estimated that this development would provide 570,000 kw of firm power. This would be added to the power supply of a region which already has upward of 10,000,000 kw of generating capacity, still growing mightily. It is quite obvious that 570,000 kw of new capacity in that large market, big though it is in terms of a single power development, cannot possibly influence in any noticeable way either the power supply program or over-all production costs. It is proportionately just too small to have any significant effect. Yet the public is led to believe that great cost reduction miracles will be produced by its construction. In my opinion it is shameful to fool the public that way.

There is no doubt whatever that a drive to bring Federal public power to New England is on. It has been on with full steam ever since the President in his State of the Union message to Congress in January, 1950, lamented the fact that New England had no Federal power developments within its borders and called for a survey to see what might be done to improve its condition. The people of New England do not share President Truman's lament. They are independent and proud and self-reliant and want no Federal government hand-outs with the concomitant controls from Washington that go with Federal public power.

The Great Myth

The myth is widely circulated that Federal public power is cheap power. It just isn't so. Federal public power is not cheap. It is a crying shame that some politicians and bureaucrats and other public power crusaders should be fooling so many people into believing that it is. In the official summary of a report on "Federal Power Supply" filed with the House Committee on Public Works of the 80th Congress by the Committee on Appropriations, the study committee said:

> In general, federal power is not cheap, but can be made to appear so by allocating substantial portions of the investment and expenses to other than power.

This study also indicated that if TVA had counted in its costs of power production the character and amounts of expenses that investor-owned companies are required to do, its rates for electricity would have

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Top Business Executives See Preview of GE Motion Picture

Ralph J. Cordiner and B. L. England Address Meeting Honoring Anniversary of Pearl Street Station

MEETING to honor the 70th anniversary of Thomas Edison's Pearl Street Station, the nation's first central-station electric power plant, and to preview a new General Electric public-service film, "Freedom and Power," more than 350 top business executives were addressed by Ralph J. Cordiner, President of General Electric Co., and B. L. England, Institute President and President of Atlantic City Electric Co., at a gathering held recently in the Waldorf-Astoria Hotel in New York, N. Y.

Speaking before the film showing, Mr. Cordiner stated that a weapon of our enemies, the suppression of individual rights in favor of bureaucratic state control, is now being used in this country as an artificial remedy for the never-ending series of emergencies that face our nation. Governmental restrictions, regulations, and controls, he said, are limiting American freedom and "leaving us weaker to face each succeeding emergency." Contrasted with this, Mr. Cordiner pointed to the record of private industry, typified in the work of Thomas Edison, "as the best proof of the vitality of freedom in the economic area."

Following Mr. Cordiner's talk, six-year-old Madelaine Edison Sloan, great-granddaughter of the famous inventor, closed the same switch that started up the generators at the Pearl Street Station in 1882. On loan from the Henry Ford Museum, the switch this time signalled presentation of General Electric's new film.

"Freedom and Power," a 29-minute sound-color motion picture produced in Hollywood, utilizes both animation and live action to depict the importance of electric power to the American way of life. Tracing the development of the electric industry against the historic background of the colonists' struggle for freedom, the film illustrates uses of electricity in the home, farm, and industry today and also gives a glimpse into the future when atomic and solar energy may be harnessed for power generation. The picture, which was designed to give the public better understanding of electricity's role in national welfare and security, will be made available to industrial firms, schools, service groups, business associations, etc.

In an address presented upon conclusion of the film, Mr. England described the expansion of the electric light and power industry as "a stirring example of contemporary pioneering in an atmosphere of freedom." He predicted future industry achievements far greater than those of the past but pointed out that these depend upon continued efforts to maintain favorable public sentiment toward economic liberty.

"An electric company is primarily a local business; it must rise or fall with its community," Mr. England said. "Unlike manufacturing plants or other enterprises, an electric company cannot pull up stakes and move on, if conditions are not to its liking. Consequently, the electric companies discovered early in their history that they must endeavor in every suitable way to promote and foster the well-being of their service areas and the people in them.

"We have found, however, that the electric companies must do more than work diligently to serve the public better," he pointed out. "The customers, employees, and stockholders should have a better understanding of our business, the benefits to them and the nation for a continuation of the industry under the free-enterprise system which has made it today unequalled anywhere.

"Essentially the job is a local one," Mr. England continued, "because the companies are local. Right now, in various parts of the country, painstaking 'grass-roots' programs are underway to give a better understanding of this industry and of America, to spread this understanding through personal contacts, through communications media of all kinds, to all the people—whose word is still law in these United States.

"We who believe in free enterprise do not have the force of government to back our beliefs," Mr. England emphasized. "Our deeds and our words must inspire the people to stand with us. The very fact that free leadership lacks the power to compel people to agree to its decisions provides us with an inestimable advantage in our struggle with socialism. It means that our business leaders cannot function as bureaucrats entrenched in the complexities of government, out of reach and indifferent to the people. Our leaders must be alert to public needs, employee wishes, stockholder desires, national and international developments, and financial conditions, to a myriad of considerations large and small which could affect for good or ill the progress of the enterprises —electrical or otherwise — entrusted to the managers. It means they must be able to take quick, effective action through willing, efficient business organizations.

"The United States is pre-eminent in practically every field of economic achievement today, a position which enables it to provide for its citizens the highest standard of living ever known. This place of leadership has not been reached because Americans are intrinsically better or more talented than the people of any other nation. It has come about primarily because the United States has been the only country in which the individual has been able to conduct a search for something better, secure in the knowledge that if his effort succeeds he will reap an adequate reward for his work.

"This stimulating characteristic can exist only in a nation where economic freedom is a respected tradition and where it is maintained," Mr. England concluded. "If this attribute of our society slips away from us, all incentive to progress will be stunned, and America's bright promise will forever go unfulfilled. We will not allow this to happen."

A painting of the Pearl Street Station was also presented to H. R. Searing, President, Consolidated Edison Co. of N. Y., Inc., counterpart of the original Edison Illuminating Co.

Long-Range Forecasting

H. H. Scaff

Vice President, Ebasco Services Incorporated

FOR years many electric companies have made continuous long-term forecasts of system loads and capacity requirements. Forecasting operating results as far as five years ahead is becoming more common among these companies, for management has found that such forecasting is helpful in normal times and a necessity during periods of rapid load growth and related utility plant expansion. Since certain economic characteristics peculiar to the electric utility business make long-term forecasting particularly useful, a brief description of some of these characteristics may help to provide a better understanding of the important part forecasts play in successful management.

An electric company is obligated by franchise and regulation to supply adequate electric service in its franchise area, generally without direct competition. Since a utility is regulated as to earnings, it does not enjoy the economic advantages of a true monopoly, although it must assume the entire responsibility for supplying adequate electric service in its area. Unlike a manufacturer, a utility may not choose to serve only that part of the demand that can be profitably handled by its facilities and leave the balance of the market to competition. Neither can an electric company defer the delivery of its product to some future time.

Because of the electric company's obligation to serve, it must anticipate future demands which may arise in its service area far enough ahead to allow for the design, construction, delivery and installation of major items of plant needed to meet these demands. Should an electric company decide today to build a new steam-electric generating station, it could not expect that station to be in comercial operation in less than three to four years.

Electric companies usually have about four dollars invested in utility plant for each dollar of annual revenue. This characteristically high ratio goes even higher at times, as, for example, when a large generating station first goes on the utility's lines. Again, when business activity drops and revenues fall, the ratio of investment to annual revenue increases, and the fixed charges on the utility's investment remain fixed.

Because of this high investment ratio, it is rare indeed that an electric company can generate enough cash internally to finance as much as one-half of the necessary plant expansion program during a period of high industrial activity, such as we have had during the past several years. A utility must, as a consequence, obtain large sums of money from outside sources for plant expansion, and long-term forecasting is a necessity in obtaining such funds.

The vast majority of an electric company's investment is in facilities which are by nature immobile and fully useful only for utility service. Utility plant cannot be economically converted to other uses but must be supported in good times and bad by the sales of electric energy.

Cooperation of All Departments

A soundly conceived plan of forecasting by electric companies is best carried out through the cooperation and work of all departments rather than as an independent effort by a separate budget staff. Better results can be expected by promoting a forward-looking attitude on the part of the entire organization and obtaining the best thinking of the sales, rate, engineering, and operating departments in arriving at various component elements of the forecast, all of which are closely inter-related.

Ordinarily, the components of the utility long-range forecast, in the general order of their preparation, are as follows:

1. Determination of assumptions as to basic economic conditions, both national and local, for the period of the forecast.
2. Forecast of sales.
3. Forecast of operating revenues.
4. Forecast of capital additions required.
5. Forecast of operating expenses.
6. Forecast of income account.
7. Cash forecast.
8. Projected balance sheet.

A top-level executive, frequently the chief financial and accounting officer, generally directs and coordinates the preparation of the forecasts in order to obtain uniformity of objective and proper balance and relationship of each of these components to the complete program. Under his guidance, the sales department will largely develop the forecast of energy sales and customers; the rate department will price out the sales to operating revenues; the engineering and operating departments will collaborate on estimates of new facilities and replacements required to serve the anticipated load; all departments will participate in the preparation of their respective operating expense forecasts; and so on. Frequent group discussions are usually desirable to coordinate these joint efforts.

The estimated level of the national economy during the period of forecast must be assured, since an electric company's sales and expenses are affected to a considerable degree by the overall business tempo. The economic predictions of competent economists should be studied and assumptions, which appear reasonable and tenable, made on population, gross national product, disposable personal income, personal consumption expenditures, FRB Index of Industrial Production, Wholesale Price Index, Consumers Price Index, and employment.

Local economic levels are then assumed which are consistent with the basic national assumptions. A study of local and national economic relationships in past periods will usually reveal a fairly consistent pattern which will guide the forecaster in his assumption of local economic levels.

With this background and an analysis of the electric company's past performance, the forecaster is ready to develop basic trends in labor and material costs and load growth. Other assumptions, such as tax rates (both Federal and local), rates to be charged

for electric service, boiler fuel costs and water conditions (if hydroelectric generation is involved), must also be made.

A forecast of kilowatthour sales is customarily made for each of the principal classes of service, which are residential, farm, commercial, industrial, government and municipal, and sales to other electric utility companies.

There is no fixed procedure of forecasting kilowatthour sales which will give uniformly realistic results. It may be said in general, however, that most sales forecasts give consideration to past sales trends, proposed changes in company policies, assumed economic conditions, population trends, residential construction, and levels of employment in the area. Some of the needed statistical information may be obtained from records of the company; reports of electric industry associations; publications of governmental, state, and regional agencies; and reports of Chambers of Commerce, financial institutions, and other local groups, such as builders, real estate operators and building and loan associations.

Where an electric company operates in dissimilar areas, it may be desirable to prepare some of the class forecasts on an area basis, if the proportions of customers and sales within those areas are changing.

Preparing Class Forecasts

In preparing the individual class forecasts, it is usual to start with residential kilowatthour sales. The first step in the preparation of this forecast is to estimate the number of residential customers to be served during the forecast period. Basically, the population and number of families in the area served will determine the number of residential customers and, hence, a thorough study of population trends in the area is required. However, since there is a ten-year interval between national census years, the population in off-census years must be estimated unless more frequent local counts have been made. In normal periods, a good correlation will exist between population of an area and the number of residential customers, but since the past few years have not been normal, previously derived ratios should be re-examined.

Other factors, such as building permits for urban residential construction, suburban area developments, and increases in number of city water meters, should all be examined and considered in establishing current trends for future projections. Of all the available statistical data pertaining to residential customers, the most reliable for forecasting purposes are the company's own records of residential customers served. These data are always available by years and by areas and cover a long period of time. They are up to date, accurate, and "grass roots" in character. Such data should be given more weight in the forecast of future residential customers than any other factor.

Estimating Kwh Use Per Customer

The second step in the preparation of the residential-sales forecast is to estimate average annual kilowatthour use per customer. Company records of average use per customer provide all the background and historical information required for this step. Past trends in use per customer, adjusted for the basic assumptions of the over-all forecast, will indicate with good accuracy the average annual kilowatthour use per customer in the future. Changes in the company's promotional policies and in competitive conditions, such as the introduction of natural gas, saturation of major appliances, or the rapid acceptance of new devices, should be given consideration in adjusting past trends to the most probable future rate of growth.

When the average number of residential customers and average annual use per customer have been forecast for each year during the period of forecast, the product of these factors in the respective years provides the forecast of annual residential kilowatthour sales.

The sales forecast for the farm class of customers is also made by estimating the number of farm customers to be served and the average annual kilowatthour use per farm during the forecast period. Population in rural areas has generally declined for the past ten years, while the number of rural electric customers has steadily increased. The number of farm customers will depend on the total number of farms within economic reach of the company's present and proposed farm lines; the company's year-by-year program for the construction of new farm lines; the extension policy of the company; and the number of prospects among the unserved farms on the company's existing farm lines. Annual use of electric energy per farm customer is forecast from past trends adjusted for the over-all economic conditions assumed for the forecast period. The product of average farm customers and use per customer in the years of the forecast period represents the kilowatthour sales forecast of this class.

In forecasting commercial kilowatthour sales it is usually necessary to separate this class into at least two customer groups—large and small—and to make separate forecasts for each. In a typical situation, not more than 1 per cent of the commercial customers would be classed as "large," but this 1 per cent would produce about 50 per cent of the kilowatthour sales of the entire commercial class and about 30 per cent of the total class revenue. The forecast of the large customer group should be based in part upon individual interviews which determine customers' own opinions of their probable future kilowatthour requirements. The forecast should also be based in part upon company records which will indicate growth trends of customers and sales in past periods when economic conditions were similar to those assumed in the forecast period.

Commercial Customer Group

The forecast of kilowatthour sales for the small commercial customer group is made in much the same way as the residential-sales forecast. A study of company statistics will usually show that a fairly constant relationship has existed between the number of residential customers and the number of small commercial customers during normal periods. From this relationship and past trends, the number of small commercial customers can be forecast, while their average annual kilowatthour use can be projected from past trends adjusted for the economic level assumed for the forecast period. The year-to-year forecast of kilowatthour sales is the product of average customers and average annual use per customer.

Industrial kilowatthour sales volume is more sensitive to changes in the local economy and in the economy of the nation than is the volume of sales to other major classes of general-use customers. In forecasting industrial sales, it is, therefore, particularly important to study the behavior of a company's

industrial sales in past periods when the local and national economy was somewhat comparable to the economic assumptions for the period of the forecast.

It is desirable also to secure statistical data indicating the long-term trends in units of production of the major industries served. The larger industrial customers should be individually interviewed to get their opinions of their future electric requirements. There should be a sufficient number of interviews with customers in each of the principal industries of the area to provide a good sample of the trends by major industries. As a rule, the number of interviews required will not be more than 2 or 3 per cent of the total number of industrial customers served. The total estimated future annual use of the customers interviewed should be compared with their annual use in past years and the year-to-year trend noted. The past year-to-year trend of the balance of kilowatthour sales to the industrial class (obtained by subtracting the total past use of the interviewed customers from the class total) should also be examined. Total industrial sales should be compared year-by-year with the industrial kilowatthour sales of the entire electric industry and a trended percentage relationship established.

Sales to Industrial Users

Since an electric company's sales to industrial users will usually correlate well with national industrial production, the sales volume, which is indicated by the assumed FRB Index in the years of the forecast period, may be used as one element in determining the industrial-sales forecast. All available information on prospective new industrial loads should, of course, be given consideration, but such information seldom covers a period more than a year or two into the future. The economic conditions forecast for the future and past trends in volume of industrial sales in like economic periods, adjusted for known changes, are two of the more important guides in forecasting industrial kilowatthour sales.

I have described in a general way some of the procedures commonly used in forecasting kilowatthour sales to the principal classes of general-business customers. Sales to other large customers, such as government agencies, municipalities, other public utilities, railroads and railways, are usually segregated in electric company records, and each segregation should be individually forecast. There are few individual customers in these groups, and an analysis of each one, to determine the most probable future use, is not too burdensome. Sales to other public utilities and sales to railroads and railways are usually by contractual arrangements which stipulate the kilowatts which such industries will demand. Conversion to kilowatthours is made from past records, and the anticipated volume of energy sales is forecast.

Correlations as a Check

An important part of sales forecasting is the check that can be made by noting the correlation which has existed in normal periods between class energy consumption and certain standard indices of our national economy which, as previously mentioned, should be established for the forecast period. For example, industrial sales can be related to the FRB Index of Industrial Production and to total employment in manufacture. Also, it will usually be found that sales to the residential, farm, and commercial groups combined will correlate fairly well with consumers' disposable income or consumers' expenditures. Since the war, the correlations mentioned have deteriorated to some extent because of the economic abnormalities of the period, and consequently their value for forecasting purposes has been partially affected.

Other useful checks are possible. For example, there are available forecasts of utility sales of the entire utility industry, made by individuals of long experience in this work. There are also records of the sales by the entire utility industry by classes for past periods. Past relationships between a particular utility's class sales and the class sales of the entire industry can be established and the trended relationship projected as a percentage. This will provide an excellent check of the class forecasts made by conventional methods, provided the economic assumptions of the particular forecast are in close agreement with the economic assumptions which governed the forecast of national class sales.

While the checks of a specific forecast with national indices are extremely useful, they should be considered only as broad checks of the results secured by more detailed conventional methods.

When the sales forecasts of kilowatthours are completed class by class, the revenue from such sales is calculated by pricing out the volume of sales to each class. This is usually the responsibility of the rate department of a company. Experienced rate men have developed techniques for this work which will produce results well within the limits of accuracy required for forecast purposes. The sales in each class are priced out separately and will reflect the number of customers, the average use of such customers, the application of existing fuel clauses, the load characteristics of the larger industrial users, and all factors that are significant in determining the revenue which will result from the application of known rates to a specified volume of sales.

The major part of an electric company's revenue will, of course, come from the sale of electric energy which, as just mentioned, will be determined by the pricing-out process. Other relatively minor items of company operating revenue, such as rents from electric property, forfeited discounts and penalties, and so forth, are usually of so little over-all significance and of such a relatively stable nature that they can be quickly estimated by individuals familiar with the nature of the items and can be incorporated with the revenue from energy sales to make up the total forecast of company revenue.

Long-Range Capital Expenditures

Forecasting capital expenditures on a long-range basis is perhaps the most complex part of the program and, at the same time, one of the most useful products of the study. It has been pointed out earlier that errors of judgment in committing the large amounts required for utility plant investment can be costly. Hence the forecast of kilowatthour sales and the plant investment program which is predicated upon that forecast are given thorough engineering and operating analysis.

Estimates of kilowatthours to be produced are developed from the kilowatthour sales forecast with company uses and system losses added. This data is converted to estimates of kilowatts of load or demand on generating stations and other power sources by applying load factor estimates derived

from study of past experience, past trends, and anticipated future conditions which may affect load factor.

Additional plant facilities required to carry the prospective load are determined by a study of the existing power system, outside sources of purchased power, future plans of interconnected systems, probable peaks, and normal reserve capacity desired. Where alternative sources of power are involved, as, for example, new hydro or steam capacity versus purchased power, studies are made as to the relative costs of the alternative methods, including fixed charges and operating expenses, as well as other advantages in system operation, to determine the most desirable course.

From such studies, estimates are developed of expenditures for new generating facilities and of improvements or replacements and retirements of existing stations. At the same time, any additions to or changes in the transmission system required to bring the energy to the company's markets are developed.

Consideration is given also to the effect of the anticipated growth on general plant facilities, such as office buildings, shops, garages, storerooms, service centers, etc.

Expenditure Forecasts

The forecast of expenditures for so-called mass distribution system property, that is, poles and lines, services, meters and transformers, and the like, are ordinarily more closely a function of number of customers and can be readily estimated giving consideration to growth, any new areas to be served, the rural electrification program, etc. In the case of special or unusual projects, as, for example, conversion of overhead distribution to underground, reinforcement and modernization of an over-loaded major system at substantial expense, such items must necessarily be determined from the experience and investigations of the engineering and operating forces.

Expense forecasts of an electric company cover the following functions: production, transmission, distribution, sales promotion, customers accounting and collecting, administrative and general, depreciation and taxes. The expense forecasts should properly reflect the various assumptions as to labor- and material-cost levels.

Production expenses fall largely into three categories: hydro generation, steam generation, and purchased power.

The kilowatthours of hyroelectric energy produced annually have little relation to operating expenses of the hydro plants, but they are an important factor in estimating system production expenses, since variations in hydro energy result in an opposite variation in amount of energy to be generated by steam or purchased. The hydro-generation expense should be estimated by plants and must be based largely on analysis of the actual expenses for a representative period, adjusted to give effect to any changed condition.

Steam-Generation Expenses

To estimate steam-generation expenses, it is first necessary to determine the amount of energy to be generated by steam. The computation to determine this starts with the total system requirements year by year, which figures are available from the sales forecasts and estimates of company uses together with system losses, and deducts median-year energy capability of hydro plants and expected normal receipts from regular purchased power sources. The amount of energy to be generated by steam should then be apportioned among the several steam stations. The generating costs should be estimated on the amount of energy to be produced and the expected seasonal and daily conditions under which each station would be operated.

Since fuel expenses are one of the largest components of electric operating expenses, the estimating of fuel efficiency becomes very important in arriving at the expense of fuels in generation of energy. Fuel efficiency should be determined for each station from a study of past performance of existing installations, knowledge of the characteristics of equipment proposed for new installation, and consideration of the varying conditions of operation at each of the generating stations.

The forecasts of transmission and distribution expenses are usually estimated on a basis of past experience, giving consideration, however, to physical condition of the system, new systems, changes in existing systems, or unusual circumstances or conditions.

Sales-promotion-expense forecasts should be based on the sales-promotion policies which the company intends to establish during the period. Previously incurred expense can be used as a guide in estimating the future expense.

Customers accounting and collecting expense is estimated generally on a basis of past trends in expense per customer, adjusted to fit new or changed conditions.

To estimate administrative and general expenses, each class of expense under this category should be studied and forecasted on an individual basis. For example, administrative and general salaries estimates should give consideration to personnel changes that are contemplated by the company. Legal services, insurance, etc., are largely contractual arrangements and can be estimated on that basis.

With the forecasts of revenues and the foregoing operating expenses and the estimates of depreciation and taxes completed, it is a relatively simple matter to prepare a statement of income. Items of non-operating income and expenses usually present no difficulty. Interest expense is computed on outstanding debt adjusted for any additional borrowings or repayments reflected in the forecast of cash receipts and disbursements, which consequently must be prepared before the estimated statement of income can be completed.

In preparing the cash forecast, net cash from operations is derived from the income estimate as adjusted for non-cash items such as depreciation. Special and non-recurring receipts or disbursements, such as debt maturities, purchase or sale of assets, claims settlements, etc., are determined by investigation and analysis. Construction expenditures are taken from the forecast of capital additions. Where the summarization of this data reveals the need for new financing, a study is made as to the probable and most desirable source of funds, such as bank loans, sale of debt or equity securities, etc., and their collateral money costs.

The results indicated by the forecasts of income, capital expenditures, and cash receipts and disbursements are brought together in the form of a balance-sheet forecast at the end of each year to show the combined effect of the entire program on the financial position of the company at the end of the forecast period. The projected balance sheet will reveal any weakness in the proposed plans and will serve as a means of checking and coordinating the underlying forecasts.

Pioneering and Development of Electrical Service to the Farm

A. E. Silver

Retired Consulting Engineer, Ebasco Services Incorporated

An address in acceptance of the 1951 Lamme Medal, presented before the Summer General Meeting of the American Institute of Electrical Engineers, Minneapolis, Minn., June 23-27, 1952

I AM deeply moved by being chosen recipient of the Lamme Medal for 1951. I am indeed proud and grateful for this high honor and accept it as a tribute to the contributions of those associated with me, as well as for myself.

This merit of accomplishment, it might well be said, grew out of the necessity of environs. The group of engineers that I was one of for so many years constituted a sector of the service staff of Electric Bond and Share Co., now Ebasco Services, Inc., which company came into being in 1905. It very soon took over interest in several struggling small electric power properties of Oregon and Washington that became the Pacific Power and Light Co. Similar steps were repeated many times in various parts of this country and elsewhere. Bond and Share, from the beginning, directed much effort to serving the rural areas. As late as 1936, approximately 85 per cent of communities served by the Bond and Share group of companies in this country had no more than 1,500 people. Bond and Share engineers worked closely with operating engineers in pioneering and developing farm service facilities. It was this occasion for leadership and the diligent support of my associates that brought about the accomplishments adjudged to merit the honor bestowed upon me.

As an engineer who has retired to the side lines, I beg indulgence while I look backward to review briefly farm electrification as I saw it grow and develop. So far as I know, it had its birth in 1898 on the system of Pacific Gas and Electric Co. in California, with the application of electric power to pumping on irrigated farms. This pumping service soon spread to Oregon and elsewhere in the irrigated areas of the West. The experience which followed revealed many hurdles —technical, economic, and social—in the path of widespread farm electrification, but the movement had taken root and for the next two decades was nurtured and pioneered by the electrical companies.

Although lacking the impetus of irrigation pumping loads, farm service installations moved eastward to the Atlantic Coast. About 1910, promotional efforts near Poughkeepsie, N.Y., brought about the extension of a 2,500-v circuit to serve 35 farms.

In this early stage, rural extensions were made to those farms that could be reached from city and town distribution systems. Progress was hard earned. It became recognized that urban practices did not fit the farm business. Underlying conditions were too widely different.

In an effort to correlate diversified experience data being produced in different parts of the country, in 1910 a Committee on Electricity in Rural Districts was organized by the National Electric Light Association (NELA). It undertook industry-wide surveys, initiated contacts with agricultural colleges, appealed to the United States Department of Agriculture for dissemination of information on the use of electricity on the farm, and published a report in 1911, probably the first systematic accumulation of data on farm electrification.

Following World War I, farm electrification was at the threshold of more consistent and extensive development. It had become clear that (1) the cost of farm lines and utilization facilities must be reduced, (2) for profitable returns there must be substantial and increasing use of service by individual farms, (3) coordinated effort in research, experimentation, and promotion on a larger scale than thus far undertaken was required, especially to develop equipment and appliances, both for the farm home and on the farmstead, that could be put to profitable use.

At the recent AIEE Summer General Meeting, A. E. Silver, retired Consulting Engineer, Ebasco Services Inc., was awarded the 1951 Lamme Medal "for his pioneering of rural electrification by designing the simplified farm-type transformer combined with high-voltage, long-span, and common neutral line construction." Bearing the motto, "The engineer views hopefully the hitherto unattainable," the Lamme Medal is presented annually to an AIEE member in recognition of "meritorious achievement in the development of electrical apparatus or machinery."

Following graduation from the University of Maine in 1902, Mr. Silver served with the General Electric Co., Raleigh Electric Co., and Carolina Power & Light Co. However, it was with Electric Bond and Share Co., to which he was transferred in 1910, and its successor, Ebasco Services Inc., that the full force of his creative ability was applied.

In 1911 he designed and supervised construction of the first high-voltage substation with its major electric equipment installed outdoors and in 1919 presented a paper on a preliminary design for a 220-kv transmission line four years before any such line was placed in operation in the United States. In the mid-Twenties he was instrumental in the development of lightning measuring devices and a specification for "self protection" of high-voltage power transformers. He also pioneered development of techniques for utilization of the 11-13-kv class in general-purpose distribution systems, both urban and rural, and in 1936 sponsored redesign of the static capacitor.

Under Mr. Silver's guidance, the intensive work leading to development of the farm-type transformer was initiated in 1932. Farm-line designs, which simplified and reduced the cost of rural distribution facilities, thus making extension of farm service economically practical, resulted and basic features of these designs received country-wide adoption. Among these features were multigrounded neutral, use of high-strength conductors for ultralong spans, and vertical arrangement of single-phase lines using pole-top insulator.

Until his retirement, Mr. Silver was EEI Chairman of the EEI-Bell Systems Joint Committee on Plant Coordination and EEI-Bell Systems Joint Committee on Development and Research. He was also EEI Chairman of a joint EEI-NEMA committee on development of coordinated and simplified design standards for distribution transformers.

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Grover C. Neff of Wisconsin Power and Light Co., Chairman of NELA's Rural Lines Committee, was a persistent and forceful champion of this concept.

At the end of World War I it also became clear that coordination of effort among all groups interested in farm electrification was needed to speed progress. In August 1923, a Committee on Relation of Electricity to Agriculture (CREA) was organized by the National Electric Light Association, American Farm Bureau Federation, American Society of Agricultural Engineers, Power Farming Association, and United States Departments of Agriculture, Commerce, and Interior. Other groups joined later.

Twenty-seven state committees were established to conduct and expedite experiments, the state agricultural colleges participating actively. In each of seven states a test project was built serving a typical group of farms. Large sums of money were expended in this experimental research, and the highly constructive results were compiled and circulated by CREA in bulletins and news letters.

Coincident with this CREA program, the power companies stepped up activities. They organized rural service departments, and sales campaigns were directed at the farm market by these companies, manufacturers, and electrical dealers. Engineering departments of the companies tackled the problem of developing lower-cost distribution lines adapted to present and future needs of serving the farming areas.

The Outlook in 1927

The NELA Rural Lines Committee, in its Report for 1927, estimated that in another 10 years half the farms of America would have electrical service, and set as a goal an average annual use of 6,000 kwh per farm.

I would like to elaborate somewhat on my earlier reference to Bond and Share's participation in fostering electrical service to farms. The initial approach of its service staff, in common with others of the industry, was to fit farm service into the practices and facilities then in vogue in rural villages, the larger towns, and cities. Furthermore, any new cross-country line usually was built with capacity for meandering from one village to another in such respective order as service might be accepted.

As experience accumulated it was found that this approach was inadequate and that practices more specific to the conditions of the farm areas must be developed. Two essentials to ultimate broad-gauge success in farm electrification appeared evident: coordinated over-all planning and practical simplification of methods and facilities to minimize costs. This became company policy.

Idaho Power Co., then of the Bond and Share group, pioneered the important and far-sighted area basis of farm-service extension. It developed coordinated sales, engineering, rate, and construction effort. Entire contiguous areas of its territory were surveyed and planned as units for eventual complete electrification. The area plan placed both construction financing and rate making on a community basis, avoiding more detail allocations that often operated to bar the small user. By 1928 this area plan was being actively prosecuted in the field.

For outstanding accomplishment in electrifying the farms in its territory, Idaho Power Co. received the Charles A. Coffin award for 1935.

With attention directed to these more advanced objectives in farm electrification procedure, it fell to my division of Bond and Share engineers to design better-suited and lower-cost facilities. A fresh appraisal of service needs and of design possibilities brought these major criteria: an adequate supply of power, reasonably steady voltage, avoidance of interruptions of other than brief duration, safety, and maximum practical simplification of design for reduction of costs.

The area basis of planning gave a very productive approach to conservation of materials and labor. While backbone lines would be made adequate for future loads, nevertheless, by strategic locating, their mileage could be minimized. However, for the branch circuits to reach the large majority of individual farms a simple low-capacity line would be adequate. Because of its largely predominant mileage, design for this latter type of line received priority of attention. Poles, conductors, span lengths, and labor were the major factors determining costs.

Minimizing the number of wires to be carried was basic. A single-phase primary circuit from Y-connected supply with only one conductor on insulators, and this at pole top, was chosen. The neutral conductor, common to both primary and secondary needs, was clamped directly to the pole, and multigrounded for positive relaying and safety to equipment and persons. A low-cost farm transformer, described later, largely eliminated the justification for secondary wires on line poles.

Utilizing phase-to-neutral voltage of the 6.6–7.2-kv class, with branch circuit lengths under control, made practical primary conductors of moderate conductivity but high strength, and composed largely of a low-cost metal, steel. With such conductors, span lengths could be increased up to 600 feet normal and number of poles reduced by one-half or more.

In urban practice, poles of 7- to 8-inch top diameter with hardware for this size were usual. Well over half of this pole material was provided as a margin against future decay, for large numbers of these poles were without effective preservative treatment. The requisite farm-line strength would be provided by a 5-inch-top pole and effective treatment would preserve it for many years.

Simplified Transformer Installation

When considering the farm customer's service tap, the fact stood out that it was costing as much, or more, to provide the transformer and complete the customer's service installation as for a pro rata share of the line itself. This was the incentive for a simplified transformer installation. Several things were done in the design of the then conventional transformer, including eliminating one primary bushing, connecting the neutral end of both primary and secondary windings directly to the tank interior, incorporating a simple spill gap from primary terminal to grounded tank for protecting transformer insulation from lightning, omitting winding taps, omitting terminal provisions for series-multiple connection of secondary coils, eliminating conventional hanger irons by interchangeable mounting directly to the pole. I presented these ideas for such a distinctly farm type of transformer to leading manufacturers and was gratified by their hearty co-operation in working out details and making them available on the market.

While evident that circuit faults from lightning, spill-gap operation,

and other causes must be accepted, it was fundamental that thermal damage and prolonged interruption therefrom be avoided. The objective of rapid fault clearing was then receiving much attention by utility and manufacturers' engineers generally. With increased relaying promptness and dependability from the multi-grounded neutral, rapid clearing would provide reasonable protection of farm circuits from thermal damage.

Other Improvements in Design

Means to minimize duration of interruption were not immediately at hand. It had long been prevailing practice that a "tripped" circuit be left dead for one minute before re-energizing. Many engineers throughout the industry, dissatisfied with this delay, were furthering the principle of rapid automatic circuit breaker reclosing. That was adaptable to the farm circuits, but with the handicap that a permanent fault prevented restoration for the entire circuit. Our engineers studied this feature and in conjunction with experimentation on the system of Tennessee Public Service Co., then a Bond and Share property, developed co-ordinated fuse-breaker protection for automatically isolating the permanently faulted branch and allowing automatic service restoration on the balance of the circuit.

All these farm-line design efforts, and others, by our engineers were carried along with the benefit of conference with engineers on operating properties and with their ready cooperation in trial application of recommended practices.

Now, speaking generally once more, in the early 1930's, the developmental era of extending electricity to the farms had reached maturity. The fruits of a decade of aggressive development activity growing from private central station initiative were an adequate know-how generally, the area basis of procedure, minimized but adequate types of construction, the block rate system, and other proved practices, together with much better means for utilization of electricity on the farm and a growing farmer understanding of benefits from electrical service. The cost of service had been brought down by more than 35 per cent. Farms served with electricity had risen from 2.8 per cent of the total in 1923 to 12.5 per cent of the total in 1935, notwithstanding that this 12-year period embraced the severe business depression precipitated in 1929; also, farm income had been subnormal since 1920. Farmers as a whole had been in very difficult circumstances to undertake the expense of wiring and of purchasing appliances and equipment to put electricity to work.

At this juncture, a pronounced turn appeared in the course of farm electrification. Farm income and farm credit materially improved. The field so well prepared by long and diligent pioneering and developmental efforts of private industry was entered in May, 1935, by the Rural Electrification Administration (REA), supported by large appropriations of funds to be loaned for the building of rural lines. The REA adopted almost unchanged the designs and construction practices developed and established by private power companies. The two organizations together made rapid progress toward completion of the task.

Based on the 1950 United States Census count of 5,382,000 farms total in the United States, of which about 268,000 were unoccupied, at the beginning of 1952, 87 per cent of the total farms and 91 per cent of the occupied farms were served, and electrical service was available to 94 per cent of the occupied farms. REA cooperatives served about 50 per cent, investor-owned power companies served 44 per cent, and municipal systems, public

(*Continued on page* 407)

Power Needs of New England

(*Continued from page* 397)

to be increased 134.94 per cent, just to cover costs, and then it would be one of the highest-cost electricity producers in the coutry instead of one of the lowest, as the public power crusaders would have us believe. The differences are paid by taxpayers, including electric companies, all over the nation.

The rates, service performance, accounting and financing of New England's investor-owned utilities are all subject to the regulatory supervision and control of able Public Service Commissions in each state. The Federal public power trust is subject to no regulatory supervision but operates by bureaucratic decree from Washington. New England folks want to keep their home-ground regulatory supervision of their essential services.

New England's investor-owned electric companies are required by law to render services to all without discrimination. The Federal public power trust long ago obtained and is still fighting to keep laws on the Federal statute books that set up a class of preference customers (largely tax-free public power distribution systems of all kinds and government financed co-ops) whose wants must first be satisfied before any electricity can be sold to others. This vicious preference clause has been condemned by the National Association of Railroad and Utilities Commissioners and by many others. It is discriminatory and grossly unfair to the millions of taxpaying consumers who have made compulsory investments out of their hard earned substance to build the plants and then are excluded from their product until the largely tax-free preference customers' needs are satisfied. New Englanders want none of that within their borders.

New England electric companies pay taxes. Federal public power projects do not, although they sometimes pay wholly inadequate amounts in lieu of taxes. The construction of Federal public power projects inevitably means the elimination of tax revenues, which must be recouped from the taxpayers who are left.

The people of New England want nothing to do with this threatened public power invasion. They have shown it many, many times in many places in many ways. They know they can't get something for nothing. Somebody has to pay the real costs. In the case of public power, if the consumer doesn't, then the taxpayer must. New Englanders prefer to have their investor-owned electric companies carry on in the future as they have so well done in the past and provide the future power needs of this area in the traditional American free-enterprise, free-choice manner with effective home-ground regulation of their operations.

Meter and Service Committee Enters Its Twentieth Year

F. A. Redding, ***Chairman*** **C. V. Morey,** ***Vice Chairman***

As the Meter and Service Committee enters its twentieth year, its organization represents a considerable departure in both scope and size from its modest beginnings on June 4, 1933. In the representative character of its membership, however, and in its approach to metering problems of all types and descriptions, there has been little change. Its record, which is a commendable one, shows that it has made a significant contribution to progress in the metering field during the past 20 years.

The savings in costs which have been effected during this period by improvements in meters, instrument transformers, and associated devices, and by the adoption of standards for their design and mounting arrangements have been very large, and although it is difficult to measure the committee's exact contributions to these savings, the committee has been responsible for a majority of them.

At the time that the Edison Electric Institute was organized, the general subject of meters was one of those assigned to the Electrical Equipment Committee. As its first meeting on June 4, 1933, this committee was divided into three divisions, one of which was called "Meters and Utilization Equipment." Two subject subcommittees on meter items were later organized under this division, one on Meter Mountings, under the chairmanship of O. K. Coleman, and the other on Energy Diversion, under the chairmanship of A. J. Allen. Each subcommittee so organized by the Electrical Equipment Committee reported to a sponsor. The sponsor assigned to both of these subcommittees was A. E. Silver, who remained as sponsor to the subcommittees and to their successor committees until 1945.

These two subcommittees were thus the forerunner of the present Meter and Service Committee. Since their interests overlapped considerably, it was decided from the outset that the two groups should meet jointly, and operations were begun and continued on this basis. Before the end of the first year, it was recognized that their joint purposes would be better served by combining, and a single Subcommittee on Watthour Meters, Service Entrance, and Energy Diversion was formed by the Electrical Equipment Committee. As the changed subcommittee name indicates, additional subjects had already been assigned by the sponsor. These new subjects included service entrance methods, service cables, and standardization of watthour meters.

During all this early period of operations, close cooperation was maintained with the AEIC Committee on Metering and Service Methods, and this coordination of effort by the two committees still continues.

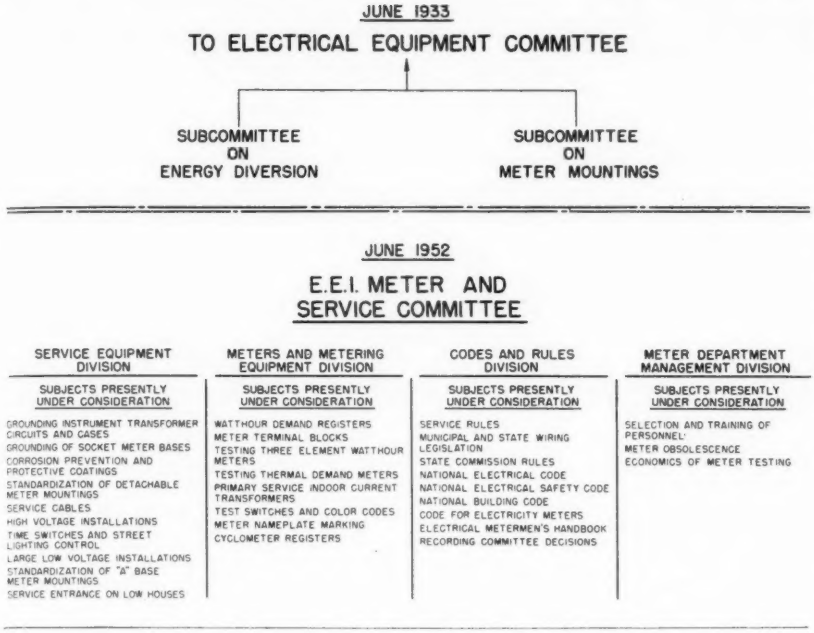
Elevated to Standing Committee

In 1935, the subcommittee's name was changed to Meters and Services and in 1940 was again changed to its present title. From the date of its initial formation until 1945, the group continued to operate more or less as a division of the Electrical Equipment Committee. Whereas the other divisions of the Electrical Equipment Committee met jointly, however, the Meter and Service group met separately, and the tie with the parent committee had been reduced to the point of making yearly reports to that body. During this 12-year span, the number of subjects assigned to the committee had increased greatly in number, and its sphere of operations had been appreciably extended. As a result, action was taken by the Institute on July 1, 1946, to elevate the Meter and Service Committee to a standing committee, which status it now holds.

This expansion of activity had started almost coincidentally with the subcommittee's initial organization. It was recognized from the very beginning that the subject of metering was an important one. There were a great many subjects demanding consideration, and it was generally thought that much could be accomplished by broadening the group's sphere of operations and its contacts. In 1936, a move was made to add to the committee "corresponding members," to be designated by member companies. Such members contribute by correspondence to the work of the committee and receive copies of all material issued by the committee.

The primary objective of the Meter and Service Committee in the field of standardization has been to simplify operations and to reduce costs without lowering the standards of metering. Typical of the progress which has been made in this connection is the present-day residential watthour meter. This meter is produced by four American manufacturers, is completely interchangeable one with the other as to mounting, and in the one rating of 15 amperes is applicable to the measurement of, perhaps, better than 90 per cent of all the residential installations in the country. Its ability to measure energy consumption over wide ranges of loads, power factor, and external temperature, indoors or out, within extremely narrow limits of accuracy, makes it stand alone as compared to other comparable measuring devices.

The coordination of the Meter and Service Committee work with the AEIC Committee on Metering and Service Methods has been carried on to the present time and has been made closer through the years. This cooperative effort began with the attendance of an AEIC representative at the EEI committee's first meetings in 1933 and developed to the point, in 1937, where both the AEIC and EEI meter groups began to hold their meetings at the same time and place, one of the sessions being conducted as a joint meeting. At the present time, coordination of effort has increased to the extent that each of the Meter and Service Committee meetings is conducted wholly as a joint affair with the AEIC group, and a single set of minutes covers the activities of both committees. This method



Comparison of Original Meter and Service Group With Its Present-Day Counterpart

of operation has furthered the work of standardization and has proved valuable in preventing duplication of effort.

The work of the Meter and Service Committee divides broadly into two parts: first, preparing suggestions for specifications for the guidance of EEI member companies in the purchase of meters and associated equipment; and second, acting for the exchange of information between members and preparing reports either of a technical nature or of more general character for assistance of the companies in organizing and conducting meter and service functions.

In the broad field of inter-industry standardization, the committee provides a source of qualified personnel available to serve as Institute representatives on various committees of the American Standards Association, such as that dealing with the Code for Electricity Meters, and on joint committees with other organizations, such as that with the National Electrical Manufacturers Association, concerned with standardization of watthour meters and meter mountings. Illustrative of the value of this work is the recent EEI Publication No. MSJ-7, AEIC-EEI-NEMA Standards for Watthour Meter Sockets. These standards have been generally accepted by manufacturers and electric companies.

A number of other services have been provided by the committee which do not specifically fit either category. One such service is the publication of the *Metermen's Handbook.* This handbook, originally published by NELA, was revised and republished by the committee in 1940, and another new revised edition was issued in 1950. Each of these revisions required a considerable amount of work and was participated in by the entire committee membership. As a result of these revisions, the handbook has been maintained on a reasonably up-to-date basis and has considerable standing as a reference book. The 1940 edition ran to 15,000 copies and the 1950 edition, a volume of 615 pages, has already reached the 25,000 mark.

Another such service is the collecting of information as to meter requirements for the assistance of the government bureaus responsible for the allocation of material. This cooperative effort was initiated during World War II and was reinstituted when the effect of the Korean War on availability of materials began to be felt. The facts and figures with respect to meter requirements, together with supporting data which have been gathered and correlated on a periodic basis by the committee, have been of inestimable value to the government representatives responsible for allocation and to the industry as a whole in keeping meter manufacture and usage on a sound basis.

The growth of activity on the part of the Meter and Service Committee can perhaps best be illustrated by comparing the original organization in chart form with the committee as presently constituted. This is shown in the accompanying cut. The number of active subjects now under consideration gives an idea of the comprehensive coverage provided by the Meter and Service Committee in discussing the problems arising in connection with meter operations and in arriving at standardization of methods and equipment. Rising costs of labor and materials present a continuing challenge to the electric industry to find more economical methods of operation. The Meter and Service Committee has provided and is continuing to provide a medium to meet this challenge insofar as metering problems are concerned.

Farm Service

(*Continued from page* 405)

utility districts, irrigation districts, and other local governmental bodies served 6 per cent.

The service extension stage of the farm electrification movement, in just over 50 years from its birth, is now near practical completion. The engineering and construction problems of supplying power to the farms generally have been met satisfactorily. Of course, improvements and modifications to meet changing conditions will continue on indefinitely. The engineering art is not static, neither is the growth of America, and particularly rural America. I believe the basic engineering principles for farm service have been well established. The big job which now remains is to continue expanding the profitable utilization of electricity to attain maximum benefits from electrification for all. This sector of farm electrification, I am confident, still holds large potentialities for engineering endeavor. It is gratifying to note at the present time throughout the nation the effort concentrated on this phase of the work.

Personals

Curtis E. Calder, Chairman of the Board, Electric Bond & Share Co., has resigned but will continue as a Director and Chairman of the Executive Committee. With Mr. Calder's resignation, the post of board chairman has been abolished, and **George G. Walker,** President, will serve as chief executive officer.

Alva B. Brown, Vice President and Operating Manager, Southern Indiana Gas & Electric Co., has been elected Executive Vice President and General Manager and a Director of the company. **Charles B. Froelich,** Treasurer, has been named a Vice President, and **Carroll L. Elliott** has been appointed General Superintendent.

Upon graduation from Montana State College in 1923 with a B. S. in electrical engineering, Mr. Brown joined the Westinghouse Electric Corp. as a student test engineer. The following year he went to the Ohio Edison Co., where he worked as a test engineer from 1924 to 1926, at which time he became associated with Southern Indiana G&E. With the latter company he served as chief engineer of the Ohio River steam electric generating station, superintendent of production of plants and substations and general superintendent in charge of gas and electric operations, before being elected vice president and operating manager in 1949.

Mr. Froelich has been with Southern Indiana G&E since 1913, and Mr. Elliott was formerly with Interstate Power Co., where he served as personnel director since 1940.

William R. Bell, Vice President of the New England Power and Connecticut River Power Companies since 1943, has been named head of these wholesale subsidiaries of the New England Electric System, assuming the duties of **Arthur E. LaCroix,** Executive Vice President of the two companies, who passed away recently.

After graduating from Worcester Polytechnic Institute as an electrical engineer in 1910, Mr. Bell served two years in the testing department of the General Electric Co. and subsequently became an inspector for the Power Construction Co. Closely identified with the development of New England power systems, he served for many years as an operating engineering executive.

John O. Gunn has been named Director of Public Relations for The Cleveland Electric Illuminating Co., succeeding **George Z. Griswold,** who has resigned. Mr. Gunn, who joined CEI three years ago, was formerly associated with the Newspaper Enterprise Association.

William W. Corbitt, Publications Editor, Ohio Power Co., has joined the public relations department of the American Gas & Electric Service Corp. Mr. Corbitt had edited the *Ohio Power Review,* company employee magazine, and *Ohio Power Farm News,* a rural customer publication.

Upon the retirement of **George E. Snider,** Chief Engineer, Ohio Edison Co., the company has divided its central engineering and construction department, formerly under Mr. Snider's direction, into a department of engineering and a department of construction. In line with this organizational change, **Edward F. Dissmeyer** has been named Chief Engineer, and **Malcolm W. Smith** has been appointed to head the company's production and transmission construction work.

Mr. Snider has served with Ohio Edison and its predecessors for more than 47 years. Formerly associated with the Toledo Railways & Light Co., he joined Ohio Public Service Co. in 1922 as chief engineer and in 1944 was elected a director and vice president in charge of operations, with supervision over all of the company's production, transmission, and distribution facilities. Upon the merger of Ohio Public Service and Ohio Edison in 1950, he became chief engineer.

Mr. Dissmeyer, who has had more than 25 years' experience in public utility engineering, has been an engineer with the Commonwealth & Southern Corp. and Commonwealth Associates, Inc. Most recently he was general staff engineer, director, and treasurer of the latter firm in Jackson, Mich.

Associated with Ohio Edison and its predecessors for 27 years, Mr. Smith has served as chief electrician of the company's Toronto plant, superintendent of electrical construction, and has been superintendent of production and transmission construction for the last five years.

James A. Zobel has been named Rate Advisor for Southern Services, Inc., succeeding **W. R. Waggoner,** who has retired (BULLETIN, Oct., 1952, p. 368).

George E. Mohn, Superintendent of Accounting, Credits, and Collections, Port Clinton Division, Ohio Edison Co., has been named Division Manager, succeeding **Henry A. Cowgill,** who has retired. Mr. Mohn has been associated with Ohio Edison and its predecessor companies for more than 33 years.

John J. Daly

JOHN J. DALY, Retail Sales Manager for The Connecticut Light and Power Co., died on September 15, in St. Mary's Hospital in Waterbury, Connecticut. He was born in Schenectady, N. Y., on July 2, 1898.

During World War I, Mr. Daly served in the Navy. In 1925 he began his association with The Connecticut Light and Power Co. as commercial manager in Waterbury, remaining in that position until 1930 when he left the company. He returned to CL&P in 1935 as commercial manager at Norwalk.

Mr. Daly joined the Air Force in 1942 and held the rank of major. After 44 months of service, he returned to CL&P in 1945 as sales promotion manager in Waterbury, advancing to retail sales manager in 1946, which position he held until his death.

Always active in both industry and community affairs, Mr. Daly was a past sales director of the New England Gas Association, a member of the Dealer Coordinating Committee of the Edison Electric Institute, and a member of the American Gas Association.

Surviving are his wife, Mrs. Anna Daly; his son, Major Edward J. Daly, who is serving with the Air Force; and a sister, Mrs. Daniel J. McLane.

EDISON ELECTRIC INSTITUTE OFFICERS AND COMMITTEES

OFFICERS

B. L. ENGLAND, *President*.....Atlantic City Electric Co., Atlantic City, N. J.
WALTER H. SAMMIS, *Vice President*.....Ohio Edison Co., Akron, Ohio
H. S. BENNION, *Vice President and Managing Director*....420 Lexington Avenue, New York, N. Y.
H. S. SUTTON, *Treasurer*.....Consolidated Edison Co. of New York, Inc., New York, N. Y.
A. B. MORGAN, *Secretary and Assistant Managing Director* 420 Lexington Avenue, New York, N. Y.

BOARD OF DIRECTORS

(Terms Expiring 1953)

A. M. BEEBEE.....Rochester Gas and Electric Corp., Rochester, N. Y.
WALKER L. CISLER.....The Detroit Edison Co., Detroit, Mich.
C. P. CRANE.....Consolidated Gas Electric Light and Power Co. of Baltimore, Baltimore, Md.
E. W. DOEBLER.....Long Island Lighting Co., Mineola, N. Y.
M. F. GILL.....Kansas Gas and Electric Co., Wichita, Kan.
N. B. GUSSETT.....Iowa Power & Light Co., Des Moines, Iowa
D. S. KENNEDY.....Oklahoma Gas and Electric Co., Oklahoma City, Okla.
L. M. KLAUBER.....San Diego Gas & Electric Co., San Diego, Calif.
R. H. KNOWLTON.....The Connecticut Light & Power Co., Hartford, Conn.
E. L. LINDSETH.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
H. T. PRITCHARD.....Indianapolis Power & Light Co., Indianapolis, Ind.
K. M. ROBINSON.....The Washington Water Power Co., Spokane, Wash.
L. V. SUTTON.....Carolina Power & Light Co., Raleigh, N. C.
H. C. THUERK.....New Jersey Power and Light Co., Dover, N. J.
W. O. TURNER.....Louisiana Power and Light Co., New Orleans, La.

(Terms Expiring 1954)

ERNEST R. ACKER.....Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.
HARLLEE BRANCH, JR.....Georgia Power Co., Atlanta, Ga.
ROBERT P. BRIGGS.....Consumers Power Co., Jackson, Mich.
H. J. CADWELL.....Western Massachusetts Electric Co., Greenfield, Mass.
STUART COOPER.....Delaware Power & Light Co., Wilmington, Del.
D. C. LUCE.....Public Service Electric and Gas Co., Newark, N. J.
M. S. LUTHRINGER.....Central Illinois Public Service Co., Springfield, Ill.
W. W. LYNCH.....Texas Power & Light Co., Dallas, Tex.
C. E. OAKES.....Pennsylvania Power & Light Co., Allentown, Pa.
HAROLD QUINTON.....Southern California Edison Co., Los Angeles, Calif.
T. E. ROACH.....Idaho Power Co., Boise, Ida.
H. B. SARGENT.....Arizona Public Service Co., Phoenix, Ariz.
L. M. SMITH.....Alabama Power Co., Birmingham, Ala.
MCGREGOR SMITH.....Florida Power & Light Co., Miami, Fla.
D. E. WASHBURN.....Boston Edison Co., Boston, Mass.

(Terms Expiring 1955)

A. D. BARNEY.....The Hartford Electric Light Co., Hartford, Conn.
G. M. GADSBY.....Utah Power & Light Co., Salt Lake City, Utah
A. H. KEHOE.....Consolidated Edison Co. of New York, Inc., New York, N. Y.
ALLEN S. KING.....Northern States Power Co., Minneapolis, Minn.
EARLE J. MACHOLD.....Niagara Mohawk Power Corp., Syracuse, N. Y.
PAUL B. MCKEE.....Pacific Power and Light Co., Portland, Ore.
S. C. MCMEEKIN.....South Carolina Electric and Gas Co., Columbia, S. C.
GROVER C. NEFF.....Wisconsin Power and Light Co., Madison, Wis.
P. H. POWERS.....West Penn Power Co., Pittsburgh, Pa.
R. G. RINCLIFFE.....Philadelphia Electric Co., Philadelphia, Pa.
WALTER H. SAMMIS.....Ohio Edison Co., Akron, Ohio
C. V. SORENSON.....Indiana & Michigan Electric Co., Ft. Wayne, Ind.
N. R. SUTHERLAND.....Pacific Gas and Electric Co., San Francisco, Calif.
J. B. THOMAS.....Texas Electric Service Co., Ft. Worth, Tex.
ALLEN VAN WYCK.....Illinois Power Co., Decatur, Ill.

Executive Committee

R. G. Rincliffe, C. P. Crane, A. H. Kehoe, R. H. Knowlton, E. L. Lindseth, D. C. Luce, C. E. Oakes, P. H. Powers, L. V. Sutton.

EDISON ELECTRIC INSTITUTE OFFICERS AND COMMITTEES

(*Continued*)

ADVISORY COMMITTEE 1952-1953

D. C. BARNES.....Virginia Electric and Power Co., Charlottesville, Va.
E. F. BARRETT..Long Island Lighting Co., Mineola, N. Y.
W. C. BECKJORD.....The Cincinnati Gas & Electric Co., Cincinnati, Ohio
J. B. BLACK.....Pacific Gas and Electric Co., San Francisco, Calif.
GEORGE H. BLAKE....Public Service Electric and Gas Co., Newark, N. J.
B. F. BRAHENEY.....Northern States Power Co., Minneapolis, Minn.
PRENTISS BROWN..The Detroit Edison Co., Detroit, Mich.
CURTIS E. CALDER.....Electric Bond and Share Co., New York, N. Y.
THOMAS G. DIGNAN....Boston Edison Co., Boston, Mass.
EDGAR H. DIXON.....Middle South Utilities, Inc., New York, N. Y.
H. P. LIVERSIDGE.....Philadelphia Electric Co., Philadelphia, Pa.
J. E. LOISEAU.....Public Service Co. of Colorado, Denver, Colo.
J. W. MCAFEE.....Union Electric Co. of Missouri, St. Louis, Mo.
P. H. MCCANCE....Duquesne Light Co., Pittsburgh, Pa.
C. B. MCMANUS.....The Southern Co., Inc., Atlanta, Ga.
I. L. MOORE.....New England Electric System, Boston, Mass.
W. C. MULLENDORE....Southern California Edison Co., Los Angeles, Calif.
WILLIAM SCHMIDT, JR., Consolidated Gas Electric Light and Power Co. of Baltimore, Baltimore, Md.
H. R. SEARING, Consolidated Edison Co. of New York, Inc., New York, N. Y.
PHILIP SPORN...American Gas and Electric Service Corp., New York, N. Y.
E. S. THOMPSON....The West Penn Electric Co. (Inc.), New York, N. Y.
G. W. VANDERZEE.....Wisconsin Electric Power Co., Milwaukee, Wis.
J. R. WHITING....Consumers Power Co., Jackson, Mich.

CHAIRMEN OF EDISON ELECTRIC INSTITUTE COMMITTEES (1952-1953)

ACCOUNTING

Accounting Division Executive, E. L. CASSADY.....Indianapolis Power & Light Co., Indianapolis, Ind.
Application of Accounting Principles.....To be appointed.
Coordinator of Customer Activities, M. J. WALSH.....Consolidated Edison Co. of N. Y., Inc., New York, N. Y.
Customer Accounting, G. F. HIGGINS.....The Detroit Edison Co., Detroit, Mich.
Customer Collections, D. M. ARNOLD.....Pennsylvania Power Co., New Castle, Pa.
Customer Relations, C. J. BERNER.....Wisconsin Electric Power Co., Milwaukee, Wis.
Depreciation Accounting, G. T. LOGAN.....Philadelphia Electric Co., Philadelphia, Pa.
General Accounting, A. R. ST. BERNARD.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
Internal Auditing, A. I. RUSSAK.....The Cincinnati Gas & Electric Co., Cincinnati, Ohio
Plant Accounting and Records, E. D. KING.....The Detroit Edison Co., Detroit, Mich.
Taxation, L. F. SCHOLLEY.....The Cleveland Electric Illuminating Co., Cleveland, Ohio

COMMERCIAL

Commercial Division General, J. R. HARTMAN.....The Cincinnati Gas & Electric Co., Cincinnati, Ohio
Commercial Sales Section, S. S. SANSBURY.....Union Electric Co. of Missouri, St. Louis, Mo.
Farm Section, E. D. SMITH.....The Dayton Power and Light Co., Dayton, Ohio
Industrial Power and Heating Section, MAXWELL COLE.....Philadelphia Electric Co., Philadelphia, Pa.
Residential Section, R. J. MILLER.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
Special Service Section, J. M. STEDMAN.....Pennsylvania Power & Light Co., Allentown, Pa.

ENGINEERING

Engineering Division General, E. H. SNYDER.....Public Service Electric and Gas Co., Newark, N. J.
Electrical Equipment, A. M. DEBELLIS.....Consolidated Edison Co. of N. Y., Inc., New York, N. Y.
Hydraulic Power, HIBBERT HILL.....Northern States Power Co., Minneapolis, Minn.
Meter and Service, F. A. REDDING.....Southern California Edison Co., Alhambra, Calif.
Prime Movers, G. V. WILLIAMSON.....Union Electric Co. of Missouri, St. Louis, Mo.
Transmission and Distribution, J. A. PULSFORD.....Public Service Electric and Gas Co., Newark, N. J.

GENERAL

Accident Prevention, W. F. BROWN.....Consolidated Edison Co. of N. Y., Inc., New York, N. Y.
Area Development, J. FRANK GASKILL.....Philadelphia Electric Co., Philadelphia, Pa.
Codes and Standards, D. C. LUCE.....Public Service Electric and Gas Co., Newark, N. J.
Electric Power Survey, WALKER L. CISLER.....The Detroit Edison Co., Detroit, Mich.
Financing and Investor Relations, H. H. SCAFF.....Ebasco Services Inc., New York, N. Y.
Industrial Relations, F. E. VERDIN.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
Insurance, I. M. CARPENTER.....Ebasco Services Inc., New York, N. Y.
Legal, T. JUSTIN MOORE.....Virginia Electric and Power Co., Richmond, Va.
Membership, E. S. THOMPSON.....The West Penn Electric Co. (Inc.), New York, N. Y.
Prize Awards, HARRY RESTOFSKI.....West Penn Power Co., Pittsburgh, Pa.
Purchasing and Stores, C. F. OGDEN.....The Detroit Edison Co., Detroit, Mich.
Rate Research, I. L. CRAIG.....Philadelphia Electric Co., Philadelphia, Pa.
Statistical, WALLACE GODARD.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
Transportation, D. K. WILSON.....Niagara Mohawk Power Corp., Albany, N. Y.